DRAFT PROJECT IMPACT REPORT

370-380 Harrison Avenue

Submitted to:
Boston Planning & Development Agency One City Hall Square . Boston, MA 02201

Submitted by:
South End 10, LLC and South End 11, LLC
c/o Related Beal 177 Milk Street . Boston, MA 02109

Prepared by:
Epsilon Associates, Inc. 3 Mill & Main Place, Suite 250 . Maynard, MA 01754

In Association with:

Utile	**Robert A.M. Stern Architects, LLP**	**Nutter McClennen & Fish LLC**
Ground Inc.	**Howard Stein Hudson**	**Bryant Associates**

December 16, 2016

Epsilon ASSOCIATES INC.

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Chapter 1.0

General Information

1.0 GENERAL INFORMATION

1.1 Introduction

South End 10, LLC and South End 11, LLC (together, the Proponent), proposes the redevelopment of the former Quinzani's Bakery and Ho Kong Bean Sprout sites in the South End neighborhood of Boston (collectively, the Project Site). The Project Site consists of three contiguous parcels of land located between East Berkeley Street and Traveler Street at 370-380 Harrison Avenue.

The Harrison-Albany corridor, as with much of Boston's South End, has experienced significant planning and development activity over the past several years. Construction on nearby sites, including The Troy, the Ink Block, 345 Harrison Avenue, and other approved developments in the neighborhood have envisioned and transformed the corridor into an increasingly active residential and retail district.

Consistent with the trajectory of the surrounding New York Streets neighborhood, and the larger South End, the proposed Project will transform the now-vacant formerly industrial parcels into an active mixed-use development. The proposed Project includes the demolition of the existing structures and the construction of an approximately 14-story mixed-use building with ground floor commercial uses and residential units above. The Project also includes three levels of below-grade parking.

The redevelopment of the Project Site provides significant public benefits including improved streetscapes, public open space and amenities, and on-site affordable housing units. The Project fills what is currently a prominent gap in the Harrison-Albany corridor with an active, mixed-use development and architecturally significant design. The Project will also generate new tax revenue and create construction-related and permanent jobs.

This Draft Project Impact Report (DPIR) is being submitted to the Boston Redevelopment Authority doing business as the Boston Planning and Development Agency (herein, "BPDA") in response to the Scoping Determination issued on September 12, 2016, which is included in Chapter 9 of this DPIR.

1.2 Development Team

Address/Location:	370-380 Harrison Avenue Between Traveler Street and East Berkeley Street in the South End Neighborhood

Proponent/owner entity:	South End 10, LLC and South End 11, LLC c/o Related Beal 177 Milk Street Boston, MA 02109 (617) 451-2100 David Chattman Andrew Hayes
Executive Architect:	Utile 15 Kingston Street Boston, MA 02111 (617) 423-7200 Michael LeBlanc Brett Bentson
Design Architect:	Robert A.M. Stern Architects, LLP 460 West 34th Street New York, NY 10001 (212) 967-5100 Dan Lobitz
Landscape Architect:	Ground Inc. 6 Carlton Street Somerville, MA 02143 (617) 718-0889 Shauna Gillies-Smith
Legal Counsel:	Nutter McClennen & Fish, LLP Seaport West 155 Seaport Boulevard Boston, MA 02210 (617) 439-2000 Mary Marshall
Environmental Permitting and Historic Resources Consultant:	Epsilon Associates, Inc. 3 Clock Tower Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Geoff Starsiak

Transportation and Parking Consultant:	Howard Stein Hudson 11 Beacon Street, Suite 1010 Boston, MA 02108 (617) 482-7080 Guy Busa Michael Santos
Civil Engineer:	Bryant Associates 90 Canal Street, Suite 301 Boston, MA 02114 (617) 24-0300 John Cusack

1.3 Public Benefits

The Project will generate many public benefits for the surrounding neighborhood and the City of Boston as a whole, both during construction and on an ongoing basis upon its completion.

Smart Growth/Transit-Oriented Development

The Project is consistent with smart-growth and transit-oriented development principles. The Project Site is well served by existing public transportation, including major regional rapid transit, commuter rail, and bus lines that provide easy access to the Project Site from the Greater Boston region. The addition of residential uses to an underutilized site that is adjacent to new, more active uses, will support the expansion of the vibrant live, work and play area which is reflected in other recent nearby projects.

Affordable Housing

To the extent the floor area ratio of the Project is 8.0, at least 20% of the units will be Affordable Housing as such term is defined in the Boston Zoning Code.

Improved Street and Pedestrian Environment

The Project will activate an underutilized site with enhanced streetscapes that include landscaped sidewalks and open spaces. A new Mid-block Connector between Traveler Street and East Berkeley Street, and a new pedestrian connection from Harrison Avenue to the Mid-block Connector are also proposed.

Sustainable Design/Green Building

The Proponent is committed to building a LEED certifiable project with a target of the Silver level, incorporating sustainable design features into the Project to preserve and protect the environment.

Increased Employment

The Project will create approximately 400 construction jobs and approximately 40 permanent jobs upon stabilization.

New Property Tax

The Project will result in increased tax revenues compared to the existing condition.

1.4 Legal Information

1.4.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments or pending legal actions concerning the Project.

1.4.2 History of Tax Arrears on Property Owned in Boston by the Proponent

The Proponent is not in tax arrears on any property it owns within the City of Boston.

1.4.3 Site Control/ Public Easements

South End 10, LLC and South End 11, LLC acquired the Project Site known as and numbered 370-380 Harrison Avenue by three separate deeds in the fall of 2015. There are currently no public easements affecting the Project Site. The Project Site is included within the South End Harrison/Albany Protection Area of the South End Local Historic District pursuant to a designation by the Boston Landmarks Commission (BLC), recorded with the Suffolk County Registry of Deeds in Book 11641, Page 62. A survey of the Project Site are included in Appendix A.

1.5 Public Participation

The Proponent has met with several community organizations and valued stakeholders to introduce the Project and discuss its effects on and benefits to the neighborhood. These outreach efforts have included presentations to the following groups:

- Chinatown Residents Association;
- Pine Street Inn;
- More Than Words;

- Old Dover Neighborhood Association;
- Washington Gateway Main Street; and
- New York Streets Neighborhood Association.

The BPDA and the Mayor's Office of Neighborhood Services identified the IAG members for the Project, and an initial meeting was held on April 25, 2016 with a community-wide public meeting held on April 28, 2018. The BCDC met to discuss the Project on June 7, 2016 and subsequent BCDC sub-committee meetings regarding the Project were held on July 14, 2016 and September 13, 2016.

Chapter 2.0

Project Description

2.0 PROJECT DESCRIPTION

2.1 Existing Site and Area Context

The approximately 1.02-acre (approximately 44,570 sf) Project Site is located at 370-380 Harrison Avenue between Traveler Street and East Berkeley Street in the South End neighborhood of Boston (see Figure 2-1). The Project Site is the former location of Quinzani's Bakery (380 Harrison Avenue) and Ho Kong Bean Sprout Co. (370 Harrison Avenue). The buildings are currently vacant and will be demolished as part of the Project.

Harrison Avenue, a prominent north-south corridor connecting the City's South End with Chinatown, includes a mix of residential, commercial, industrial and institutional uses. The area around the Project Site, identified as the New York Streets sub-area in the Harrison-Albany Corridor Strategic Plan, includes a mix of commercial and industrial properties with large parking lots, as well as a number of new and proposed development projects, including Ink Block, The Troy, 345 Harrison Avenue and 80 East Berkeley Street. Further south down Harrison Avenue is the South of Washington Street (SOWA) sub-area, a vibrant mixed-use neighborhood.

To the east of the site is Interstate 93, which separates the South End from South Boston—the two neighborhoods are connected by Traveler Street and East Berkeley Street/West 4th Street. To the north of the area is the Massachusetts Turnpike which separates the South End from Chinatown—the two neighborhoods are connected by Harrison Avenue, Washington Street and Shawmut Avenue/Tremont Street. Both highways are easily accessible by the Project area.

The Project Site is in close proximity to several MBTA bus routes and other transportation hubs, including the MBTA Silver Line along Washington Street. MBTA bus routes 9 and 11 make stops at the East Berkeley Street corner of the Project Site.

There are three public open spaces located within one-quarter-mile of the Project Site including Peter's Park, Rotch Playground, and Rolling Bridge Park. The Berkeley Street Community Garden is also located with one-quarter-mile of the Project Site.

2.2 Proposed Project

The Project will include the construction of a new, up to approximately 356,500 sf, mixed-use building facing Harrison Avenue and extending between Traveler and East Berkeley Streets. The approximately 150-foot tall, 14-story building will include up to approximately 324 residential units with a mix of rental and home ownership units (approximately 232 and 92, respectively, with the final mix to be determined as the Project progresses through the approval process), and up to approximately 8,500 sf of ground floor retail. Figures 2-2 to 2-4 include a Ground Floor Plan, a Typical Upper Floor Plan, and a Section. Table 2-1 includes the Project program.

Table 2-1 Project Program

Project Element	*Approximate Dimension*
Residential	348,000 sf[2]
Rental units[1]	232
Ownership units[1]	92
Commercial / Retail	8,500 sf[2]
Total Square Footage	**356,500 sf[2]**
Building Height[3]	Up to 150 feet
Parking	180 spaces

[1] Residential mix to be determined as the Project progresses through the approval process.

[2] The square footage of each use may vary from these figures; however, the total square footage will not exceed 356,500 sf.

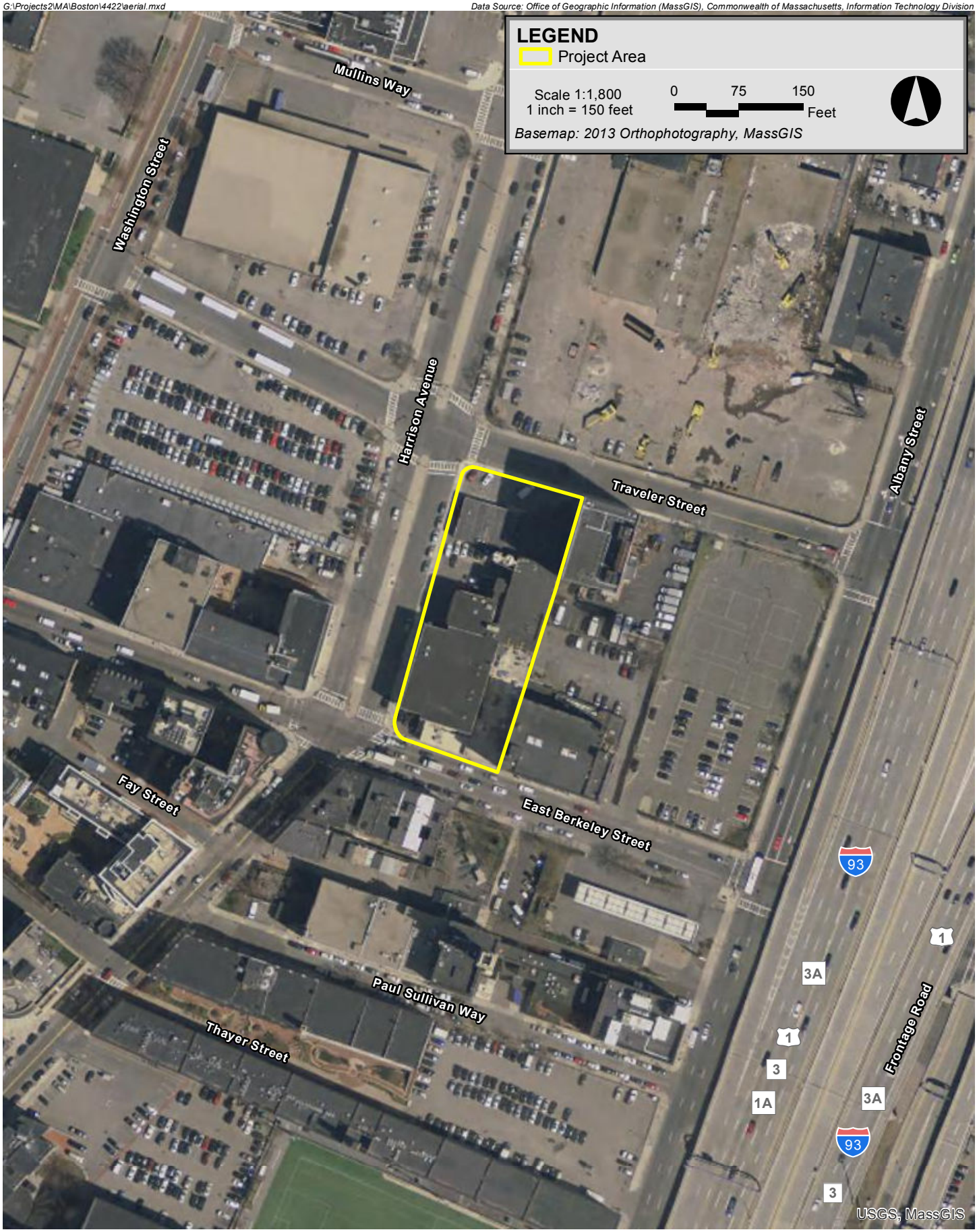
[3] The "Building Height" for the purposes of the Project and the PDA Development Plan shall be as defined in Article 2A and the provisions of Section 64-35 of the Boston Zoning Code, except that any elevator penthouse, stairway bulkhead or any other roof structure built for the purpose of accessing a roof deck or roof terrace, as well as the said roof decks and roof terraces themselves, shall be excluded from the calculation of the Building Height.

Proposed Building

The proposed 14-story building steps down on the East Berkeley Street side to seven stories to complement the existing heights along East Berkeley Street, and steps down to ten stories on the Traveler Street side of the site to complement the new construction to the north. The building steps back above the tenth floor along Harrison Avenue, except for a seven-story section at the corner of East Berkeley Street and Harrison Avenue. The massing includes open areas on the eastern side of the building to allow for natural light to penetrate to the Mid-block Connector (described below). A setback in the middle of the site on Harrison Avenue will create a new courtyard (described below).

The Project includes approximately 8,500 sf of space anticipated for retail or community uses along Harrison Avenue, including prominent locations on the corners of Traveler Street and East Berkeley Street. At the center of the Project Site, will be the entrances to the residences, lobbies, and residential services. Upper level roof decks will include outdoor social space and planting as shown on Figure 2-5.

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division



370-380 Harrison Avenue Boston, Massachusetts

Epsilon Associates Inc.

Figure 2-1

Aerial Locus Map

370-380 Harrison Avenue Boston, Massachusetts

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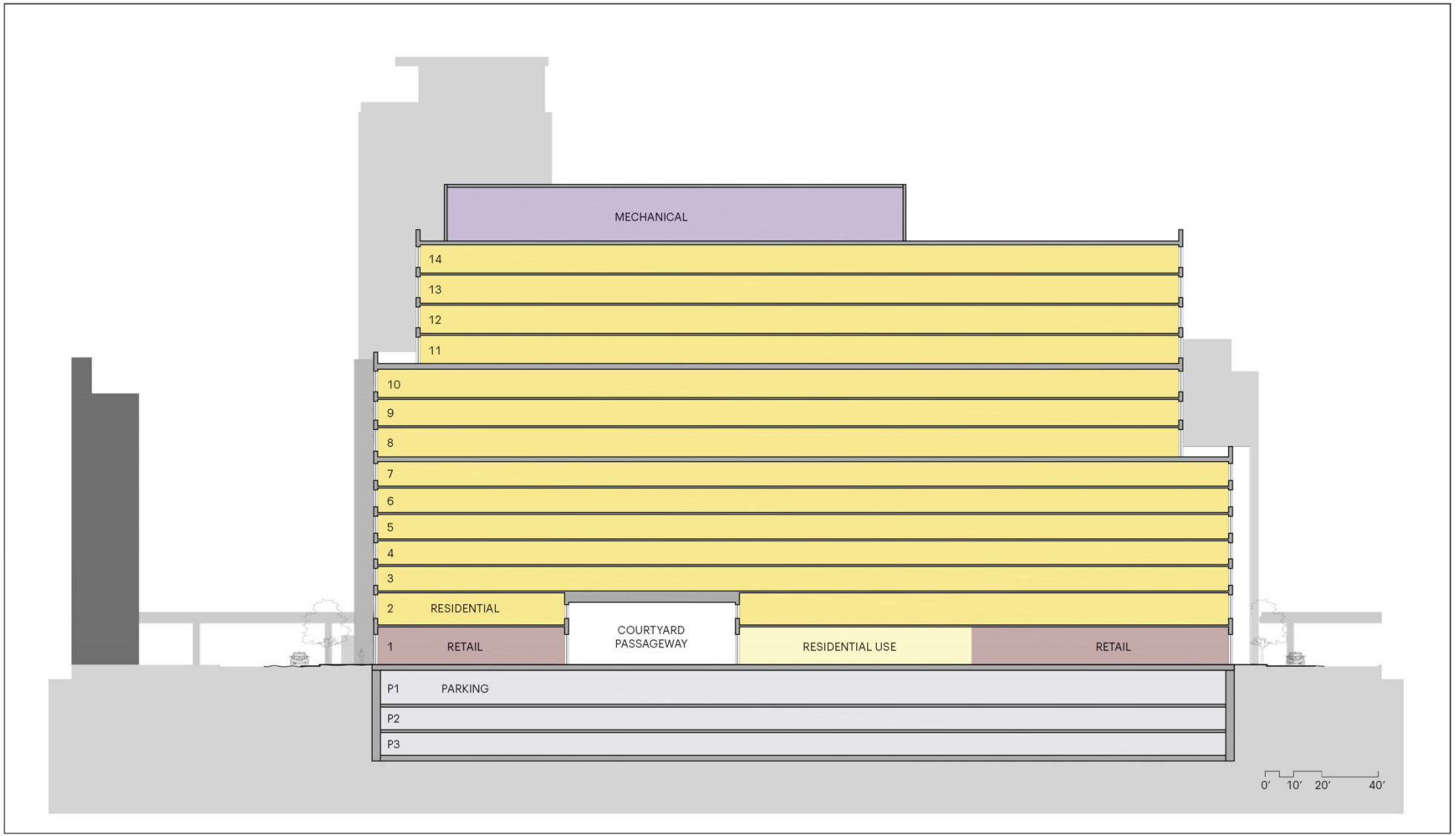
Figure 2-2
Ground Floor Plan

Figure 2-3
Typical Upper Floor Plan



370-380 Harrison Avenue Boston, Massachusetts

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Figure 2-4
Section

370-380 Harrison Avenue Boston, Massachusetts

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Figure 2-5
Roof Plan

Mid-Block Connector and Courtyard

To minimize the Project's impact on the surrounding streets, the Project proposes a Mid-block Connector, a multi-purpose area connecting Traveler Street to East Berkeley Street on the eastern edge of the site, which is intended to encourage pedestrian circulation throughout the entirety of the Project. The Mid-block Connector will provide complete pedestrian passage across the length of the Project Site, as well as back-of-house facilities, passenger drop-off, and traffic flow, thus extending the amount of open space allotted for vehicles, bicycles, and pedestrians. The Mid-block Connector will prioritize all modes of transportation (e.g., personal vehicles, bicycles, walking) by minimizing curb elevations, and will provide vehicular access to the building's parking garage below grade, and access to drop-off zones for the residential lobbies. Vehicles not using the parking garage, such as loading vehicles and those dropping off passengers, will exit the site onto East Berkeley Street. Portions of the Mid-block Connector will be open to the sky and filled with landscaped elements to enrich the space and improve the pedestrian experience.

A new connection will link the Mid-block Connector to a proposed courtyard on Harrison Avenue, referred to herein as the "Courtyard Passageway". The Courtyard Passageway will expand upon the public realm proposed for Harrison Avenue (as detailed below and in Chapter 6), and provide an addition connection through the site. The Courtyard Passageway will be partially covered by the building, and will provide entrances to a residential lobby on one side and a retail space on the other. The Courtyard Passageway will be accentuated by planting and unique paving designs, and will allow for retail, residential entries, and other activities to open out directly to the public.

The Mid-block Connector, in conjunction with the dynamic Courtyard Passageway, will have the potential to become a valuable neighborhood asset through the cohesive design and programmed open spaces that provide new landscaping, high-quality hardscaping and other finishes, and other public amenities. Pedestrian-scale lighting and planting will line the new drive, further defining the character of the shared corridor; this careful selection of materials will allow the Mid-block Connector to maximize functionality for both transportation and pedestrian users, while creating open space that adapts to the needs of residents.

Parking and Access

Approximately 180 parking spaces are proposed in a below-grade garage. See Figure 2-6 for a parking level plan. Vehicles will enter the site from Traveler Street onto the Mid-block Connector and access the garage via a ramp immediately at this location. Traffic exiting the parking garage will enter the Mid-block Connector and exit onto Traveler Street. The parking garage will also include a portion of the Project's proposed bicycle facilities for residents.

Public Realm

The Project's proposed public realm improvements will significantly improve the existing condition of the Site and connect the Site to its surroundings. The main public realm on the Site will be along the Harrison Avenue edge of the site. The enlarged public domain along Harrison Avenue is envisioned as a linear, tree-lined plaza with a range of widths. This spatial arrangement of walkway and landscape will allow for multiple potential uses that can provide public and commercial amenities to the neighborhood. Additional improvements will be made to the Traveler Street and East Berkeley Street edges of the Project Site, providing welcoming experience to pedestrians. The experience will be further enhanced by the ground floor spaces and lobbies to the building. More details about the public realm are discussed in Chapter 6 and an Open Space Plan is included as Figure 2-7.

2.3 Changes Since the PNF

2.3.1 Overview of Changes

The Project design and program have evolved since the filing of the PNF in response to internal Project team discussion and comments from the BPDA, Boston Civic Design Commission, and community. These changes include:

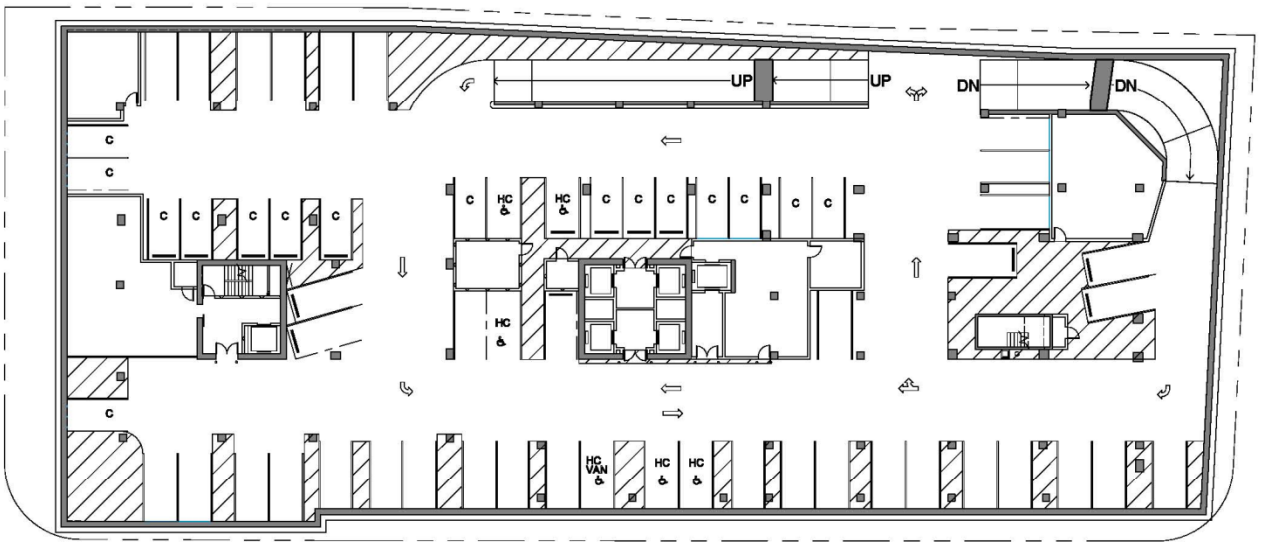
- The number of total units has increased from approximately 280 units to approximately 324 units. The number of rental units are proposed to increase from approximately 175 units to approximately 232 units, while the number of condominium units is proposed to decrease from approximately 105 units to approximately 92 units, with final allocation of rental and home ownership unit mix to be determined in the course of the public approval process.

- The amount of commercial/retail spaces has increased from approximately 6,000 sf to approximately 8,500 sf.

- The massing has been revised to lower the heights of the sections of the building on East Berkeley Street and Traveler Street, add the Courtyard Passageway connecting Harrison Avenue to the Mid-block Connector, and eliminating the plaza previously proposed on the corner of Harrison Avenue and Traveler Street. A description of the design changes is described further in Section 2.3.2.

2.3.2 Design Changes

Since the PNF submission, the overall massing design has been revised to improve its relationship with the context surrounding the Project area: the masses abutting the street edge along the north, west, and south perimeters have been reduced in height such that these masses are directly correlated to their immediate neighboring buildings; the tallest



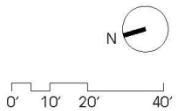


Figure 2-6
Parking Level P1 Plan

portions of the massing have been set back from the property line to preserve the pedestrian scale along the urban edge, and run axially in the north-south direction. Massing height adjustments are as follows:

- Massing along Traveler Street has been reduced from 150 feet to approximately 107 feet, defined by the heights of Ink Block to the north (96 feet) and future developments to the northwest (150 feet).

- Massing along the street edge of Harrison Avenue has been reduced from approximately 127 feet to approximately 107 feet, defined by the heights of future developments to the northwest (150 feet) and the Pine Street Inn to the south (93 feet).

- Massing along East Berkeley Street has been reduced from approximately 106 feet to approximately 75 feet, defined by the heights of 160 East Berkeley Street to the west (72 feet) and Medieval Manor to the east (70 feet).

- The height of the massing that is set back from the street edge remains unchanged with a height of 150 feet; this massing has evolved into a window wall system, which allows heavy, masonry forms to be grounded at street level and to protect the more delicate glass details setback from the urban edge, a notion which reiterates the importance of the pedestrian scale.

In addition to redesigning the overall massing forms, the courtyard previously proposed in the PNF has transformed into the Courtyard Passageway, completely traversing the site to the Mid-block Connector. This design decision is in response to creating a more open, public place-making area on the Site for the neighborhood to utilize. Through thoughtful landscape and streetfront design, the arcade at the northwest corner has been eliminated, allowing for open, sun-lit entries along Harrison Avenue, which continue to wrap the building podium into the Courtyard Passageway. Residential entries have also been relocated, from Harrison Avenue to the south portion of the Courtyard Passageway, shielding residents from the busy traffic-prone avenue, and further, allowing residents to easily access the building lobby from the drop-off provided in the Mid-block Connector.

Finally, the brick and window detailing have further developed—contextual brick precedents continue to drive the design through utilization of historic details that can be altered into a clean, contemporary aesthetic.

2.4 Alternatives

2.4.1 Reduced FAR Alternative

The Proponent was directed to submit a project alternative with a maximum FAR of 6.5. An alternative that is limited to an FAR of 6.5 is depicted in Figure 2-8 and Figure 2-9. This alternative eliminates massing from the rear of the interior portions of the proposed structure, substantially "narrowing" the main bar of the building along the Harrison Avenue frontage by eliminating building mass along the Mid-block Connector. The building's depth along the Traveler Street and East Berkeley Street frontage is also reduced. Under this alternative, minor adjustments to building fenestration are likely necessary to accommodate adjustments to floor plates and, when compared to the preferred alternative, the reduced building massing is largely imperceptible from street-level.

The alternative would increase area "open-to-the-sky" within the Mid-block Connector, although uses of those areas would remain as proposed in the preferred alternative. More importantly, the provision of on-site affordable units would be substantially reduced.

2.5 Zoning and Regulatory Controls

The Project Site is located within: (i) the Economic Area North-Area 1 ("EDA North-Area 1") of the South End Neighborhood Zoning District as established in accordance with Article 64 of the Boston Zoning Code and Enabling Act (the "Code"); (ii) the Groundwater Conservation Overlay District (GCOD); and (iii) the Restricted Parking Overlay District (RPOD), each as established in accordance with the provisions of the Section 3-1A of the Code. The Project Site is included within the area which was the subject of a detailed planning and community review process and resulted in the development of the Harrison-Albany Corridor Strategic Plan. The Project Site is also located within the South End Landmark District Protection Area, and is subject to review and approval by the South End Landmark District Commission (SELDC).

The Proponent will seek to establish a Planned Development Area (PDA) for the Project Site in accordance with the provisions of Sections 3-1A and 64-28 in a manner which is consistent with the articulated goals and purposes of the Harrison-Albany Corridor Strategic Plan and the South End Neighborhood Zoning District. The PDA plan will also authorize compliance with the GCOD and the RPOD, both of which are overlay districts established in accordance with the Code.

370-380 Harrison Avenue Boston, Massachusetts

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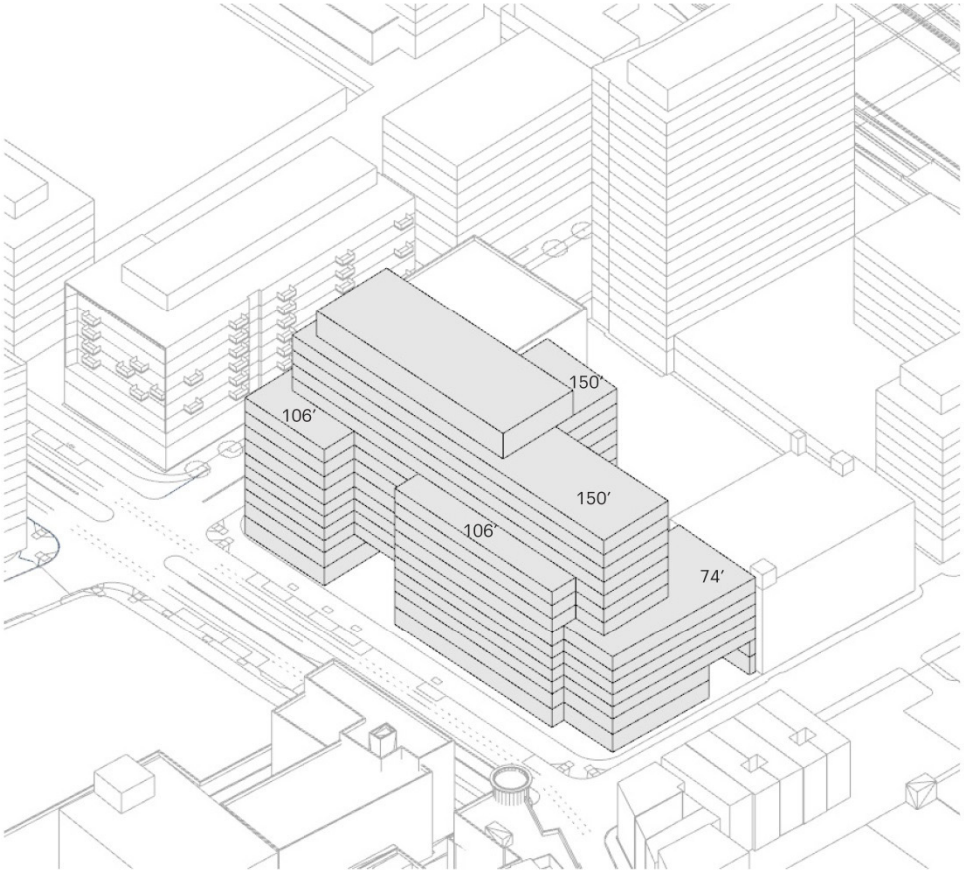
Figure 2-7
Open Space Plan



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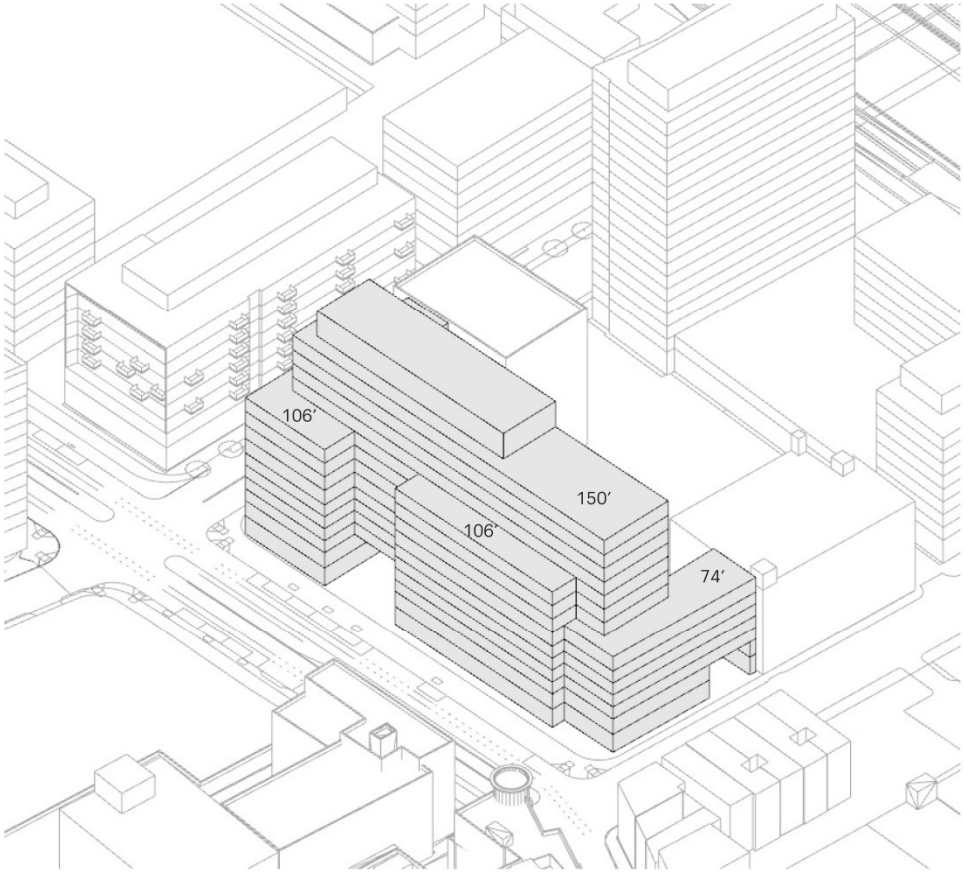
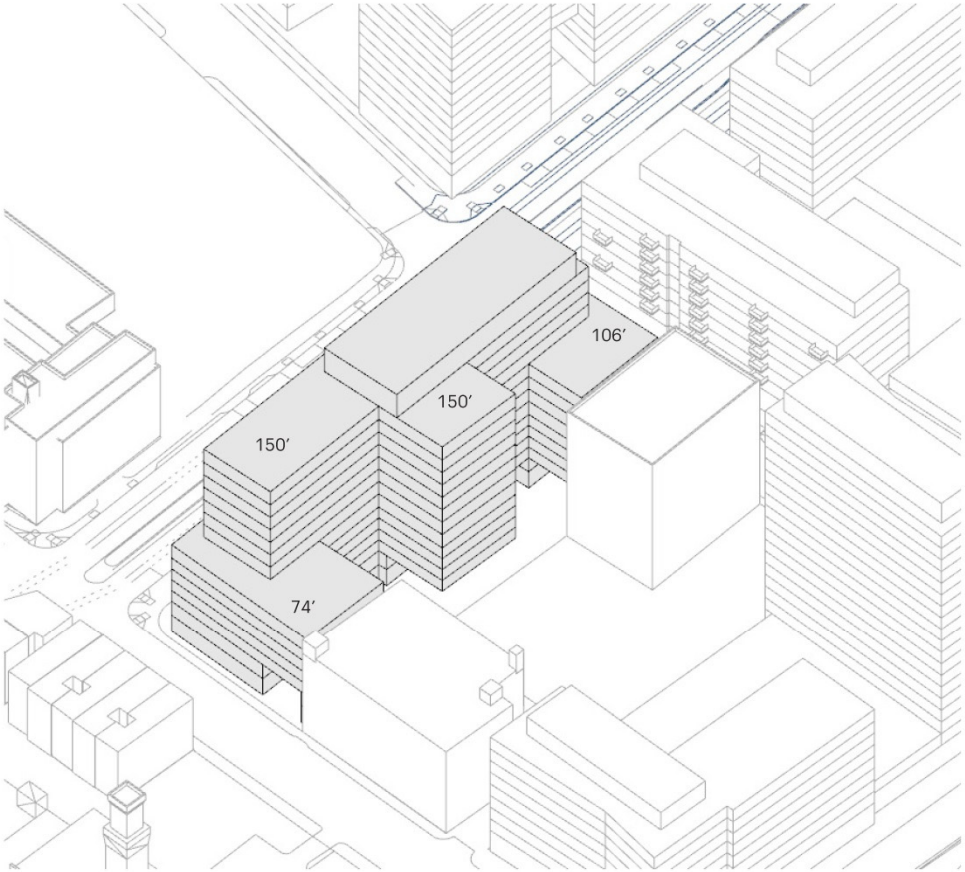


FAR 6.5



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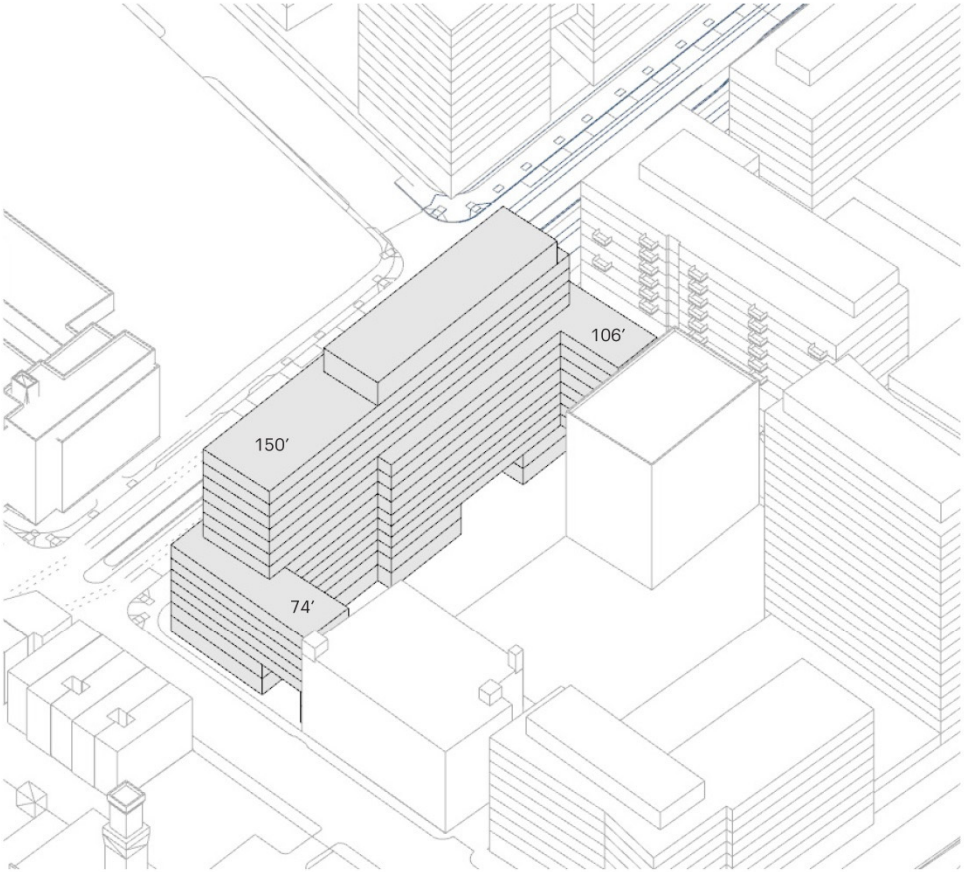

FAR 6.5

370-380 Harrison Avenue Boston, Massachusetts

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Figure 2-9

6.5 FAR Alternative – Mid-block Connector Axon

2.6 Anticipated Permits and Approvals

Table 2-2 sets forth a preliminary list of permits and approvals from governmental agencies and authorities that are expected to be required for the Project. It is possible that only some of these permits and approvals will be required, or that additional permits or approvals will be required. The Proponent may seek state and federal funding for the Project.

Table 2-2 Anticipated Permits and Approvals

Agency Name	*Permit / Approval*
FEDERAL	
Environmental Protection Agency	National Pollution Discharge Elimination System General Permit
Federal Aviation Administration	Determination of No Hazard to Air Navigation
STATE	
Department of Environmental Protection	Plan Approval (if required); Fossil Fuel Utilization permit (as required); Notice of Demolition/Construction
Executive Office of Energy and Environmental Affairs (MEPA Office)	Review under the Massachusetts Environmental Policy Act (if required)
Massachusetts Historical Commission	State Register Review, including Determination of No Adverse Effect or Memorandum of Agreement; Section 106 Review (if required)
Massachusetts Water Resources Authority	Construction Dewatering Permit (if required); Temporary Construction Dewatering Permit (if required); Sewer Use Discharge Permit (if required)
LOCAL	
Boston Air Pollution Control Commission	Parking Freeze Permit (if required)
Boston Civic Design Commission	Review and approval pursuant to Article 28 of the Boston Zoning Code
Boston Fire Department	Fuel Storage Permit
Boston Inspectional Service Department	Building Permit (Long Form); Demolition Permit; Certificate of Occupancy
Boston Public Improvement Commission/ Department of Public Works	License for installation of groundwater monitoring wells; Specific Repair Approvals; Discontinuances (if required); Permit for sign, awning, hood, canopy, or marquee, or other incursion over public right of way (as required); Street Layout (as required); Tieback/Earth Excavation Approvals (if required)

Table 2-2 Anticipated Permits and Approvals (Continued)

Agency Name	*Permit / Approval*
LOCAL	
Boston Public Safety Commission, Committee on Licenses	Parking Garage Permit; License for Storage of Inflammables
Boston Public Works Department	Curb Cut Permits; Street Opening Permits; Street/Sidewalk Occupancy Permits
Boston Planning and Development Agency	Review under Article 80, including Large Project Review, as required pursuant to Article 80B of the Zoning Code and PDA Plan Review, as required pursuant to Article 80C of the Zoning Code; Cooperation Agreement; Affordable Housing Agreement(s); Boston Residents Construction Employment Plan Agreement; Certifications of Consistency and Compliance
Boston Transportation Department	Transportation Access Plan Agreement; Review and Approval of a Construction Management Plan
Boston Water and Sewer Commission	Sewer Extension/Connection Permit; Sewer Use Discharge Permit; Site Plan Approval; Temporary Construction Dewatering Permit (if required); Cross Connection/Backflow Prevention Approval
Boston Zoning Commission	Zoning Approval subject to BPDA recommendation and approval under Article 80C of the Zoning Code, including PDA Plan Approval
South End Landmark District Commission	Design Review; Application for demolition and construction in the South End Landmark District Protection Area

2.7 Schedule

Construction of the Project is estimated to commence during the second quarter of 2017 with completion by the second quarter of 2019.

Chapter 3.0

Transportation

3.0 TRANSPORTATION

3.1 Introduction

Howard Stein Hudson (HSH) has conducted an evaluation of the transportation impacts of the redevelopment of 370-380 Harrison Avenue in Boston's South End neighborhood. The transportation study contained in the PNF adheres to the Boston Transportation Department (BTD) Transportation Access Plan Guidelines and BPDA Article 80 Large Project Review process. The study included an evaluation of existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian activity.

Since the submission of the PNF, changes to the proposed Project have been minimal in relation to the overall transportation impacts. The changes to the Project are presented in Table 3-1. The changes as shown in Table 3-1 are relatively minor and will not result in significant changes to the conclusions in the transportation study provided in the PNF. Based on the analysis presented in the PNF, the Project will have minimal impact on the study area intersections and the pedestrian and public transportation facilities in the area. The following sections outline the changes to the Project since the filing of the PNF and the proposed transportation demand management and mitigation measures to be implemented by the Proponent.

Table 3-1 Building Program Comparison

	PNF Project[1]	*DPIR Project*[2]	*Change*
Apartment Units	175	232	+57
Condominium Units	105	92	-13
Retail Space	6,000 sf	8,500 sf	+2,500 sf
Parking Spaces	180	180	0

[1] As presented in the March 31, 2016 Project Notification Form.

[2] Residential mix to be determined as the Project progresses through the approval process.

3.2 Transportation Impact Assessment

This section assesses the transportation-related impacts associated with the Project and its comparison with the program as presented in the PNF. This assessment addresses trip generation and parking demand related to the Project.

Trip Generation Comparison

Trip generation estimates for the program presented in the PNF and the Project as currently proposed were developed based on rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (9th edition, 2012). The rates for land use code (LUC) 220 – Apartment and LUC 820 – Shopping Center were used to determine the trip generation estimates for the Project. These are standard rates used for transportation studies reviewed by the BPDA and the BTD.

The trip generation estimates provided in the PNF were based on a development program of 313 residential units and 11,000 sf of retail space, which represents a larger development program than was actually proposed in the PNF, and only modestly larger than what is now proposed in this DPIR. Because vehicular trip estimates included in the PNF were based on a comparable development program to what is now contemplated in the DPIR, Project-related trip generation will remain slightly less than described in the traffic analysis provided in the PNF. A comparison of PNF and DPIR vehicle trip generation is provided in Table 3-2, below.

The ITE trip generation rates produce vehicle trip estimates, which are then converted to person trips using vehicle occupancy rates (VOR) based on the 2009 National Household Travel Survey data and other local data. Using travel mode split information for this area of Boston, the total person trips are then allocated to the various modes of vehicle, transit, and walk/bicycle trips. The travel mode shares and the vehicle occupancy rates are consistent with the traffic study provided in the PNF. Table 3-2 through Table 3-4 provide a comparison of the trip generation presented in the PNF and for the new development program.

Table 3-2 Vehicle Trip Generation Comparison

Time Period	*Land Use*	*Direction*	*PNF Project*	*DPIR Project*	*Change*
Daily	Residential	In	292	302	+10
		Out	292	302	+10
		Total	584	604	+20
	Retail	In	50	38	-12
		Out	50	38	-12
		Total	100	76	-24
	Total	In	342	340	-2
		Out	342	340	-2
		Total	684	680	-4
a.m. Peak Hour	Residential	In	13	13	0
		Out	40	41	+1
		Total	53	54	+1
	Retail	In	3	2	-1
		Out	1	1	0
		Total	4	3	-1
	Total	In	16	15	-1
		Out	41	42	+1
		Total	57	57	0
p.m. Peak Hour	Residential	In	39	41	+2
		Out	28	28	0
		Total	67	69	+2
	Retail	In	7	5	-2
		Out	8	7	-1
		Total	15	12	-3
	Total	In	46	46	0
		Out	36	35	-1
		Total	82	81	-1

Table 3-3 Transit Trip Generation Comparison

Time Period	*Land Use*	*Direction*	*PNF Project*	*DPIR Project*	*Change*
Daily	Residential	In	353	365	+12
		Out	353	365	+12
		Total	706	730	+24
	Retail	In	84	64	-20
		Out	84	64	-20
		Total	168	128	-40
	Total	In	437	429	-8
		Out	437	429	-8
		Total	874	858	-16
a.m. Peak Hour	Residential	In	19	19	0
		Out	26	27	+1
		Total	45	46	+1
	Retail	In	6	4	-2
		Out	1	1	0
		Total	7	5	-2
	Total	In	25	23	-2
		Out	27	28	+1
		Total	52	51	-1
p.m. Peak Hour	Residential	In	26	27	+1
		Out	40	41	+1
		Total	66	68	+2
	Retail	In	4	3	-1
		Out	17	14	-3
		Total	21	17	-4
	Total	In	30	30	0
		Out	57	55	-2
		Total	87	85	-2

Table 3-4 Walk/Bicycle Trip Generation Comparison

Time Period	*Land Use*	*Direction*	*PNF Project*	*DPIR Project*	*Change*
Daily	Residential	In	494	511	+17
		Out	494	511	+17
		Total	988	1,022	+34
	Retail	In	247	190	-57
		Out	247	190	-57
		Total	494	380	-114
	Total	In	741	701	-40
		Out	741	701	-40
		Total	1,482	1,402	-80
a.m. Peak Hour	Residential	In	3	3	0
		Out	74	76	+2
		Total	77	79	+2
	Retail	In	2	1	-1
		Out	4	3	-1
		Total	6	4	-2
	Total	In	5	4	-1
		Out	78	79	+1
		Total	83	83	0
p.m. Peak Hour	Residential	In	72	75	+3
		Out	5	6	+1
		Total	77	81	+4
	Retail	In	21	16	-5
		Out	5	4	-1
		Total	26	20	-6
	Total	In	93	91	-2
		Out	10	10	0
		Total	103	101	-2

As shown in Table 3-2 through Table 3-4, the new development program is expected to have a similar impact to the trip generation estimates that were presented in the PNF. As previously stated, the trip generation estimates presented in the PNF reflected a development program that consisted of 313 residential units and 11,000 sf of retail space, providing an overly conservative estimate. As a result, the estimates and conclusions presented in the PNF remain valid under the current development program presented in this DPIR.

3.3 Transportation Demand Management

The Proponent is committed to implementing Transportation Demand Management (TDM) measures to minimize automobile usage and Project related traffic impacts. TDM will be facilitated by the nature of the Project (which does not generate significant peak hour trips) and its proximity to numerous public transit alternatives.

On-site management will keep a supply of transit information (schedules, maps, and fare information) to be made available to the residents and patrons of the Project Site. The Proponent will work with the City to develop a TDM program appropriate to the Project and consistent with its level of impact.

The Proponent is prepared to take advantage of good transit access in marketing the Project ite to future residents. The TDM measures for the Project may include, but are not limited, to the following:

- The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries, and will work with tenants as they move in to the retail/commercial spaces to raise awareness of public transportation, bicycling, and walking opportunities;

- The Proponent will provide orientation packets to new tenants containing information on available transportation choices, including transit routes/schedules and nearby vehicle sharing and bicycle sharing locations. On-site management will work with residents and tenants as they move in to help facilitate transportation for new arrivals;

- The Proponent will provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options;

- The Proponent will promote to commercial tenants that, as employers, they can save on payroll-related taxes and provide employee benefits when they offer transportation benefits such as subsidized public transportation;

- The Proponent will provide electric vehicle charging stations for five percent of the parking spaces in the garage;

- The Proponent will provide information on travel alternatives for employees and visitors via the Internet and in the building lobby; and

- The Proponent will explore the feasibility of providing spaces in the garage for a car sharing service.

3.4 Transportation Mitigation Measures

Although the traffic impacts associated with the new trips are minimal (generating less than two vehicle trips per minute during the peak hours), the Proponent will continue to work with the City of Boston so that the Project efficiently serves vehicle trips, improves the pedestrian environment, and encourages transit and bicycle use.

The Proponent is responsible for preparation of the TAPA, a formal legal agreement between the Proponent and the BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, TDM measures, and any other responsibilities that are agreed to by both the Proponent and the BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed. The proposed measures listed above, and any additional transportation improvements to be undertaken as part of this Project, will be defined and documented in the TAPA.

The Proponent will also produce a Construction Management Plan (CMP) for review and approval by BTD. The CMP will detail the schedule, staging, parking, delivery, and other associated impacts of the construction of the Project.

Chapter 4.0

Environmental Review Component

4.0 ENVIRONMENTAL REVIEW COMPONENT

4.1 Wind

4.1.1 Introduction

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by the Proponent to qualitatively assess the wind comfort and wind safety for the proposed Project. This assessment is based on the following:

- a review of the regional long-term meteorological data from Boston Logan International Airport;
- design drawings and renderings received by RWDI on June 22, 2016;
- wind-tunnel studies undertaken by RWDI for similar projects in Boston;
- RWDI's engineering judgment, experience and expert knowledge of wind flows around buildings[1,2,3]; and,
- use of software developed by RWDI (Windestimator[2]) for estimating the potential wind conditions around generalized building forms.

This qualitative approach provides a screening-level estimation of potential wind conditions.

4.1.2 Site and Building Information

The proposed development site is located west of I-93 and south of I-90 at the west end of the block bound by Harrison Avenue, Traveler Street, Albany Street and East Berkeley Street in Boston, MA. The site is currently occupied by two and three story industrial buildings, and surrounded by parking lots, multi-lane roadways and buildings ranging from five to 20 stories in height in the immediate vicinity. The downtown core of Boston, with high-rise developments, is to the north and northeast. The terrain to the northwest through west to southwest comprises of dense arrays of three to five-story residential and commercial

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1 C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.

2 H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004*, Nashville, Tennessee.

3 H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.

buildings. To the south through east, the surroundings are slightly less dense, consisting of residential and industrial development, with Dorchester Bay about two miles to the east.

Several new buildings are currently under construction or proposed to be built in the adjacent lots in the near future. The locations of some of these projects close to the proposed site are shown in Figure 4.1-1. Most of the projects indicated are proposed to be 10-stories in height or taller, and are likely to be complete before the proposed Project.

The Project is a 14-story mixed-use building with a Courtyard Passageway running east-west across the building at ground level. The building will be similar in height to other mid-rise buildings in the surrounding area, including proposed buildings currently under construction on Harrison Avenue and nearby streets.

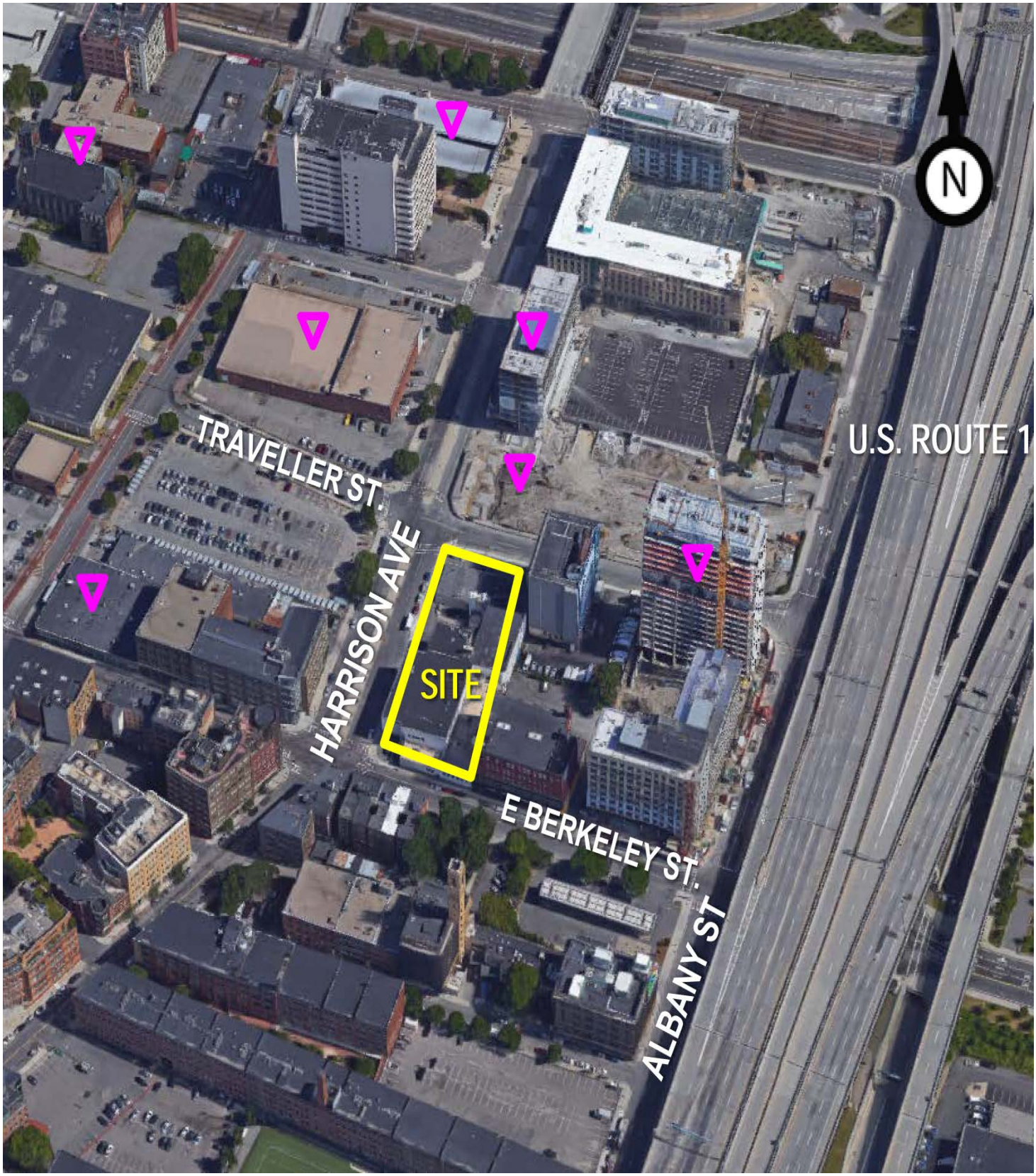
A Mid-block connector will also be constructed between the proposed building and the existing building to the east. Apart from the Courtyard Passageway, major pedestrian areas on and around the site include main entrances on Harrison Avenue, East Berkeley Street and the pedestrian passage and sidewalks on all neighboring streets.

4.1.3 Meteorological Data

Wind statistics at Boston's Logan International Airport between 1973 and 2011, inclusive, were analyzed for the spring (March to May), summer (June to August), fall (September to November) and winter (December to February) seasons. Figures 4.1-2 and 4.1-3 graphically depict the distributions of wind frequency and directionality for the four seasons and for the annual period. When all winds are considered (regardless of speed), winds from the northwest and southwest quadrants are predominant. Northeasterly winds are also frequent, especially in the spring.

Strong winds with mean speeds greater than 20 miles per hour (mph) (red bands in the images) are most prevalent from the northwesterly directions throughout the year, while the southwesterly and northeasterly winds are also frequent.

Winds from the northwest, southwest and northeast directions are considered most relevant to the current study, although winds from other directions were also considered in our assessment.



370-380 Harrison Avenue Boston, Massachusetts

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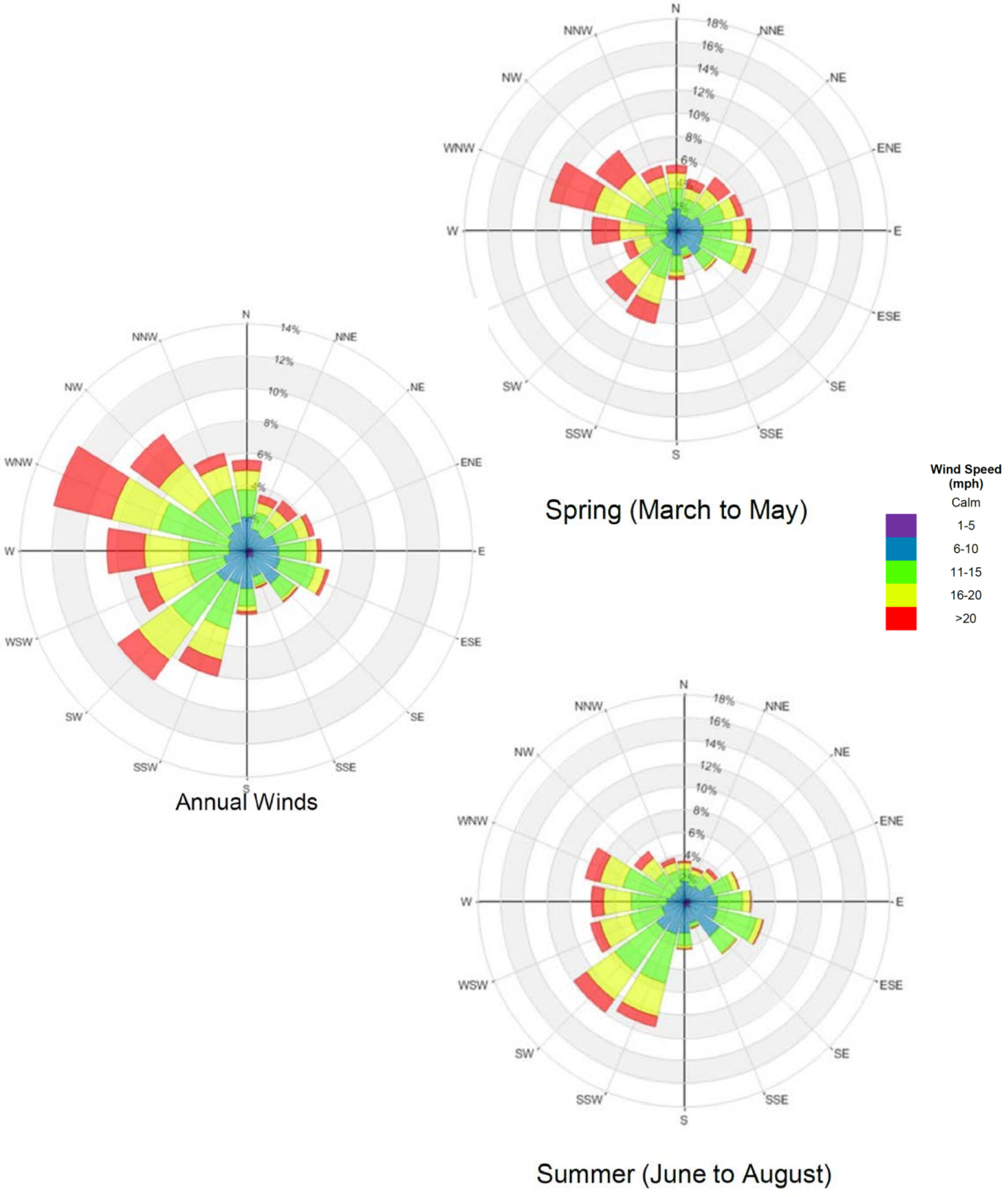
Figure 4.1-1
Projects with Board Approved or Under-Construction Status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14%
12%
10%
8%
6%
Spring (March to May)
Annual Winds
Summer (June to August)
Wind Speed (mph)
Calm
1-5
6-10
11-15
16-20
>20


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12%
10%
8%
6%
Fall (September to November)
Annual Winds
Winter (December to February)
Wind Speed (mph)
Calm
1-5
6-10
11-15
16-20
>20

4.1.4 Assessment Criteria

Pedestrian Wind

The BPDA has adopted two standards for assessing the relative wind comfort of pedestrians.

First, the BPDA wind design guidance criterion states that an effective gust velocity (hourly-mean wind speed + 1.5 times the root mean square wind speed) of 31 mph should not be exceeded more than one percent (1%) of the time. This criterion is hereby referred to as the gust criterion.

The second set of criteria used by the BPDA to determine the acceptability of specific locations is based on the work of Melbourne. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the one-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed), as shown in Table 4.1-1.

Table 4.1-1 Boston Redevelopment Authority Mean Wind Criteria*

Level of Comfort	*Wind Speed*
Dangerous	> 27 mph
Uncomfortable for Walking	> 19 and ≤27 mph
Comfortable for Walking	> 15 and ≤19 mph
Comfortable for Standing	> 12 and ≤15 mph
Comfortable for Sitting	< 12 mph

* Applicable to the hourly mean wind speed exceeded one percent of the time.

Pedestrians on sidewalks will be active and wind speeds comfortable for walking are appropriate. Lower wind speeds comfortable for standing are desired for building entrances where people are apt to linger. The wind climate found in a typical downtown location in Boston is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the BPDA effective gust velocity criterion of 31 mph at most areas, while windier conditions may be expected near the corners of tall buildings exposed to the prevailing winds. However, without any mitigation measures, this wind climate is likely to be frequently unsuitable for more passive activities such as sitting. Buildings taller than the surroundings tend to intercept winds at high elevations and redirect them down to grade level. These downwashed winds subsequently accelerate around downwind building corners or channel along street canyons, making those areas windy. These generic flow patterns are illustrated in Figure 4.1-4. Corners of tall buildings near street intersections tend to be windier, rated uncomfortable for walking, due to the openness of the intersection as well.

Discussions related to pedestrian wind comfort and safety will be based on the annual wind climate. Typically, the summer and fall winds tend to be more comfortable than the annual winds, while the winter and spring winds are less comfortable than the annual winds.

4.1.5 Results

Predicting wind speeds and occurrence frequencies involves the assessment of building geometry, orientation, position and height of surrounding buildings, upstream terrain and the local wind climate. Over the years, RWDI has conducted thousands of wind-tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. This knowledge has been incorporated into RWDI's proprietary software that allows, in many situations, for a qualitative, screening-level numerical estimation of pedestrian wind conditions without wind tunnel testing.

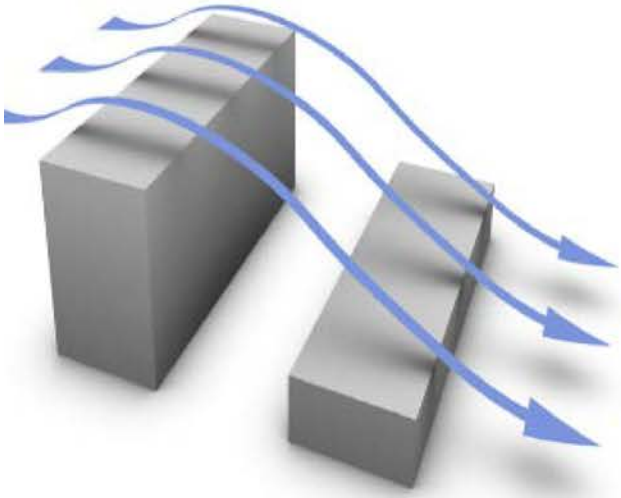
4.1.5.1 Existing Pedestrian Wind Conditions

On an annual basis, wind conditions around the existing site are currently predicted to be suitable for pedestrian activities. Wind speeds are expected to be categorized as comfortable for sitting, standing or walking at most areas. This is largely due to the uniform height of surrounding buildings that tends to keep winds flowing over them and prevents the redirection of winds to street level at most areas.

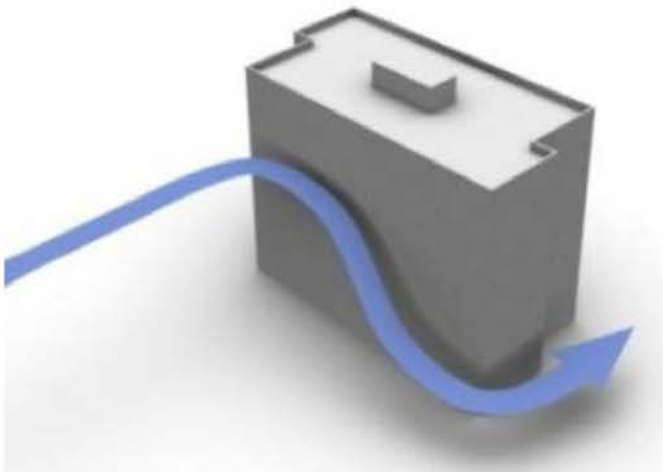
Wind conditions at most areas around the site are also expected to be in compliance with the gust criterion. Taller buildings anticipated to be built on either side of Harrison Avenue to the north of the Project Site, upon completion, are expected to result in wind speeds that exceed the gust criterion on the sidewalk between them. Similarly, it is likely that winds near the tall building at the east end of Traveler Street exceed the gust criterion. This is caused due to the west and northeast winds as illustrated in Figure 4.1-5.

4.1.5.2 Future Pedestrian Wind Conditions

The proposed building is similar in height to other mid-rise buildings that exist and are proposed in the neighboring area, but taller than the majority of the surrounding area that includes low-rise buildings or parking lots, particularly to the west. The upcoming buildings anticipated to be completed in the lots to northwest and north would help shelter the site from the predominant northwesterly winds. However, the Project will be exposed to the westerlies and partially to the north-westerlies due to the open parking lot and low buildings to the immediate west.



(a) Wind Flow Over Low Buildings



(b) Downwashing and Corner Acceleration

(c) Channeling

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Figure 4.1-4

Generic Wind Flow Patterns

370-380 Harrison Avenue Boston, Massachusetts

RWDI

Figure 4.1-5

Flow Patterns of Winds around the Existing Surroundings
(Assuming Approved Buildings are Constructed)

Wind Safety

Winds at most areas around the Project are expected to meet the gust criterion. However, given the height of the building and its exposure to the west and northwest winds, wind speeds near the southwest corner of the building and the Courtyard Passageway along Harrison Avenue are likely to exceed the gust criterion. These conditions will be studied through the design process to determine appropriate mitigation, if necessary. The northwest corner would be sheltered by the new building on the west side of Harrison Avenue. Gust exceedances noted in Section 4.1.5.1 for the existing scenario are expected to remain unchanged after the addition of the Project.

Wind Comfort - Sidewalks

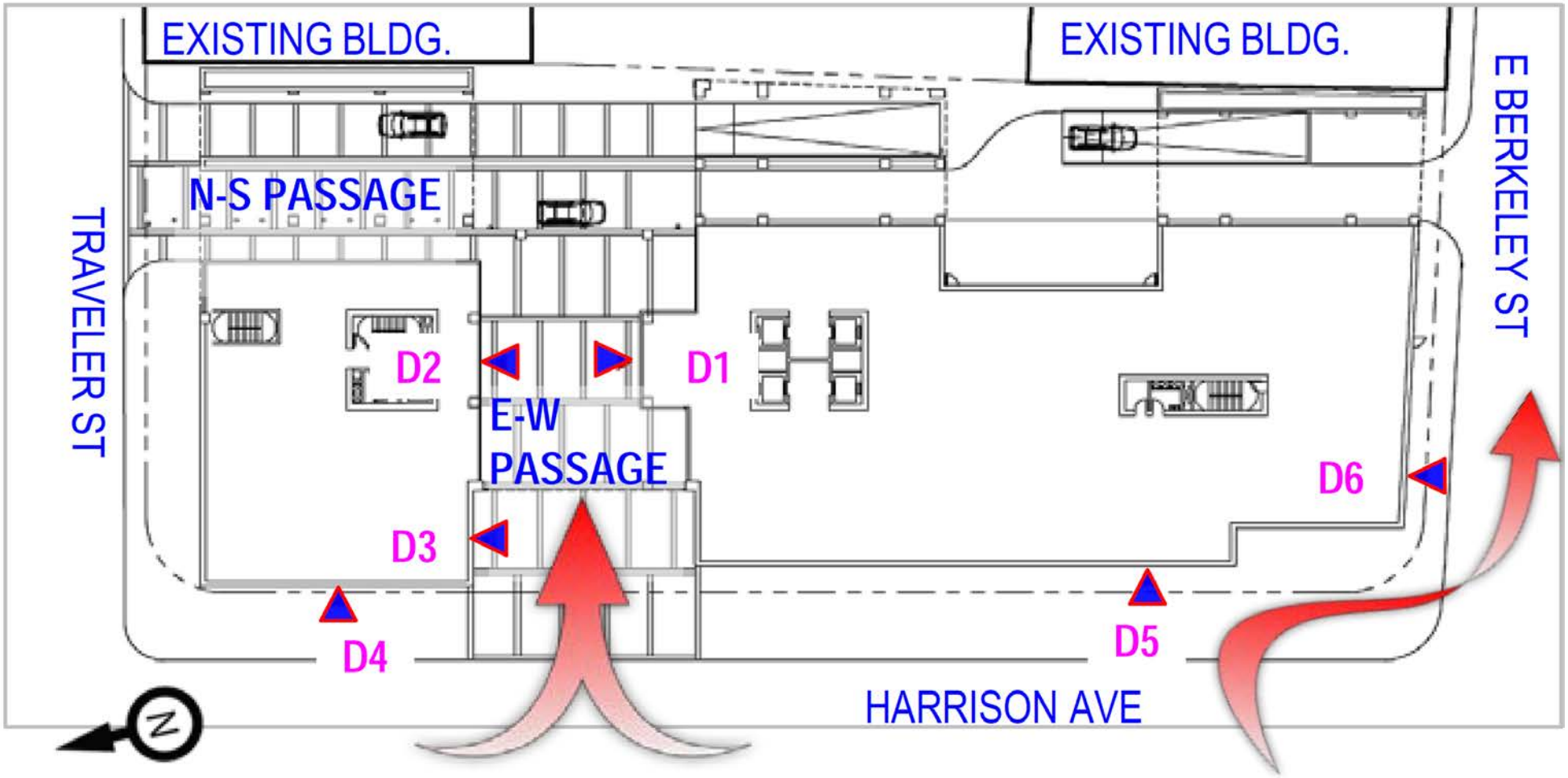
Wind speeds around the Project are anticipated to be rated comfortable for walking or better at most areas; limited areas of Harrison Avenue and Traveler Street are predicted to be uncomfortable for walking between the Project and neighboring mid-rise buildings currently under construction. The conditions on Harrison Avenue and Traveler Street would be similar to those that exist currently on Traveler Street between Washington Street and Harrison Avenue, and on Washington Street between Traveler Street and Herald Street. East Berkeley Street would be more protected by the surrounding buildings and wind conditions are not likely to change significantly. The Project team will continue to consider the predicted wind conditions during the design of the Project, and will incorporate strategies to mitigate these impacts as necessary.

Wind Comfort – Passage and Entrances

Ideally, wind conditions rated comfortable for sitting or standing are appropriate for doorways and entrances where pedestrians are likely to wait. Based on the design evaluated for this analysis, mitigation for the predicted wind conditions in the Mid-block Connector and Courtyard Passageway are anticipated, as well as the entrances on the corners of Harrison Avenue and East Berkeley Street (Figure 4.1-6). The Project team is studying potential wind control measures such as canopies, wind screens, landscaping, and recessed doorways to mitigate these conditions.

4.1.6 Summary

Based on the local wind data, the Project height, information on surroundings, and RWDI's experience with similar projects, it is predicted that wind speeds at most areas around the Project would be suitable for pedestrian activity. Limited areas around the Project Site, including Harrison Avenue, Traveler Street and the Courtyard Passageway are predicted to have higher than desired wind conditions. Wind gust conditions are anticipated to be similar to the existing conditions, with additional areas predicted at the southwest corner of the Project and within the Courtyard Passageway. The Project team will study measures to mitigate the potential wind impacts as the design progresses.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TRAVELER ST
D2
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E-W
PASSAGE
D6
D3
D4
D5
HARRISON AVE
N

4.2 Shadow Impacts

4.2.1 Introduction and Methodology

A shadow impact analysis was conducted to assess potential shadow impacts from the Project. The study evaluated the following four times of the year:

1. Spring Equinox (March 21) at 9:00 a.m., 12:00 noon, and 3:00 p.m.
2. Summer Solstice (June 21) at 9:00 a.m., 12:00 noon, 3:00 p.m. and 6:00 p.m.
3. Autumnal Equinox (September 21) at 9:00 a.m., 12:00 noon, 3:00 p.m. and 6:00 p.m.
4. Winter Solstice (December 21) at 9:00 a.m., 12:00 noon, and 3:00 p.m.

The shadow analysis identified existing and net new shadow that will be created by the Project, illustrating the likely shadow impact of the Project on existing conditions. The analysis focuses on nearby open spaces, sidewalks, and bus stops, adjacent to and in the vicinity of the Project Site. Shadows have been determined using the applicable Altitude and Azimuth data for Boston. Figures showing the net new shadow from the Project are provided in Figures 4.2-1 through 4.2-14 at the end of this section.

The analysis shows new shadow from the Project will generally be limited to nearby streets and sidewalks, as well as the Project Site. No new shadow will be cast onto public open spaces.

4.2.2 Vernal Equinox (March 21)

On the vernal equinox, the sun remains relatively low in the sky which will cause Project-related net new shadow at 9:00 a.m. to be cast across portions of Harrison Avenue and its sidewalks and the parking lot across Harrison Avenue (Figure 4.2-1). No new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

At 12:00 p.m., areas of net new shadow will rotate northward and will be cast on the Harrison Avenue and Traveler Street corridors with limited shadow cast on the interior portions of the Project Site (Figure 4.2-2). No new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

At 3:00 p.m., new shadow along the Harrison Avenue corridor will be been largely eliminated, with the exception of a small portion of the west-facing courtyard along the middle of the block (Figure 4.2-3). Limited new shadow will be cast onto the parking lot across the street from the site. No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

4.2.3 Summer Solstice (June 21)

On the summer solstice, morning sun will cast shadow across Harrison Avenue and its sidewalks, as well as the parking lot across the street from the site (Figure 4.2-4). An area of new shadow during the morning will fall on a portion of East Berkeley Street and its northern sidewalk, including the bus stop at the southwesterly corner of the Project Site. No new shadow will be cast on existing public open spaces.

By 12:00 p.m., shadows will rotate toward the northerly portions of the site with new shadow falling on the sidewalk along the site's Harrison Avenue and Traveler Street sides, as well as small portions of Traveler Street and Harrison Avenue. Shadow will also fall over portions of the Mid-block Connector (Figure 4.2-5). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

Afternoon shadow, during the summer solstice, will fall over the Mid-block Connector, portions of Traveler Street, and a limited area of the interior of the 240-260 East Berkeley Street and 39 Traveler Street parcels (Figure 4.2-6). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

By 6:00 p.m., new shadow will extend easterly over interior portions of 240-260 East Berkeley Street, 39 Traveler Street, and Troy Boston at 55 Traveler Street (Figure 4.2-7). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

4.2.4 Autumnal Equinox (September 21)

On the autumnal equinox, morning sun will cast new shadow across limited areas of Harrison Avenue and its sidewalks, and a portion of the parking lot across the street (Figure 4.2-8). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

By 12:00 p.m., areas of new shadow will rotate northward and will fall across portions of Harrison Avenue and its eastern sidewalk, and Traveler Street and its sidewalks, as well as portions of the Mid-block Connector (Figure 4.2-9). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

At 3:00 p.m., new shadow will remain on Traveler Street and its sidewalks and the entire Mid-block Connector, as well as minor areas of 240-260 East Berkeley Street and 39 Traveler Street (Figure 4.2-10). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

New shadow at 6:00 p.m. will be interspersed through the public realm within the vicinity of the Project Site (Figure 4.2-11). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

4.2.5 Winter Solstice (December 21)

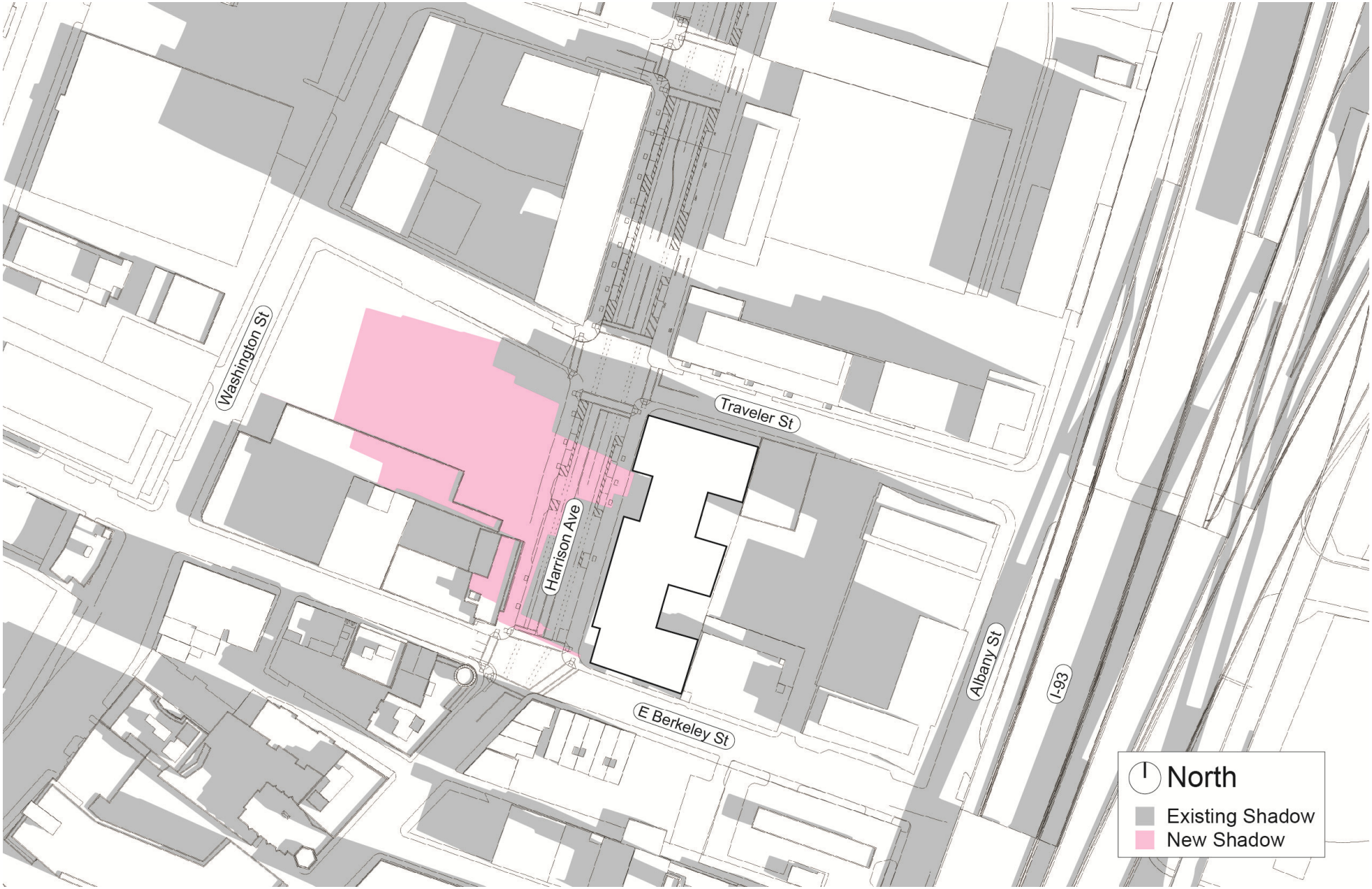
The low angle sun during the winter solstice will cause new shadow to be cast across a small area of Harrison Avenue and its sidewalks, and a portion of the parking lot across the street (Figure 4.2-12). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

Mid-day shadows will fall within the Mid-block Connector, portions of Harrison Avenue and its eastern sidewalk, and portions of Traveler Street and its sidewalks (Figure 4.2-13). No net new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

At 3:00 p.m., new shadow will fall on the Mid-block Connector and will be interspersed through parcels to the east of the Project Site and a minor area of Traveler Street (Figure 4.2-14). No new shadow will be cast onto public open spaces or bus stops in the vicinity of the Project.

4.2.6 Conclusions

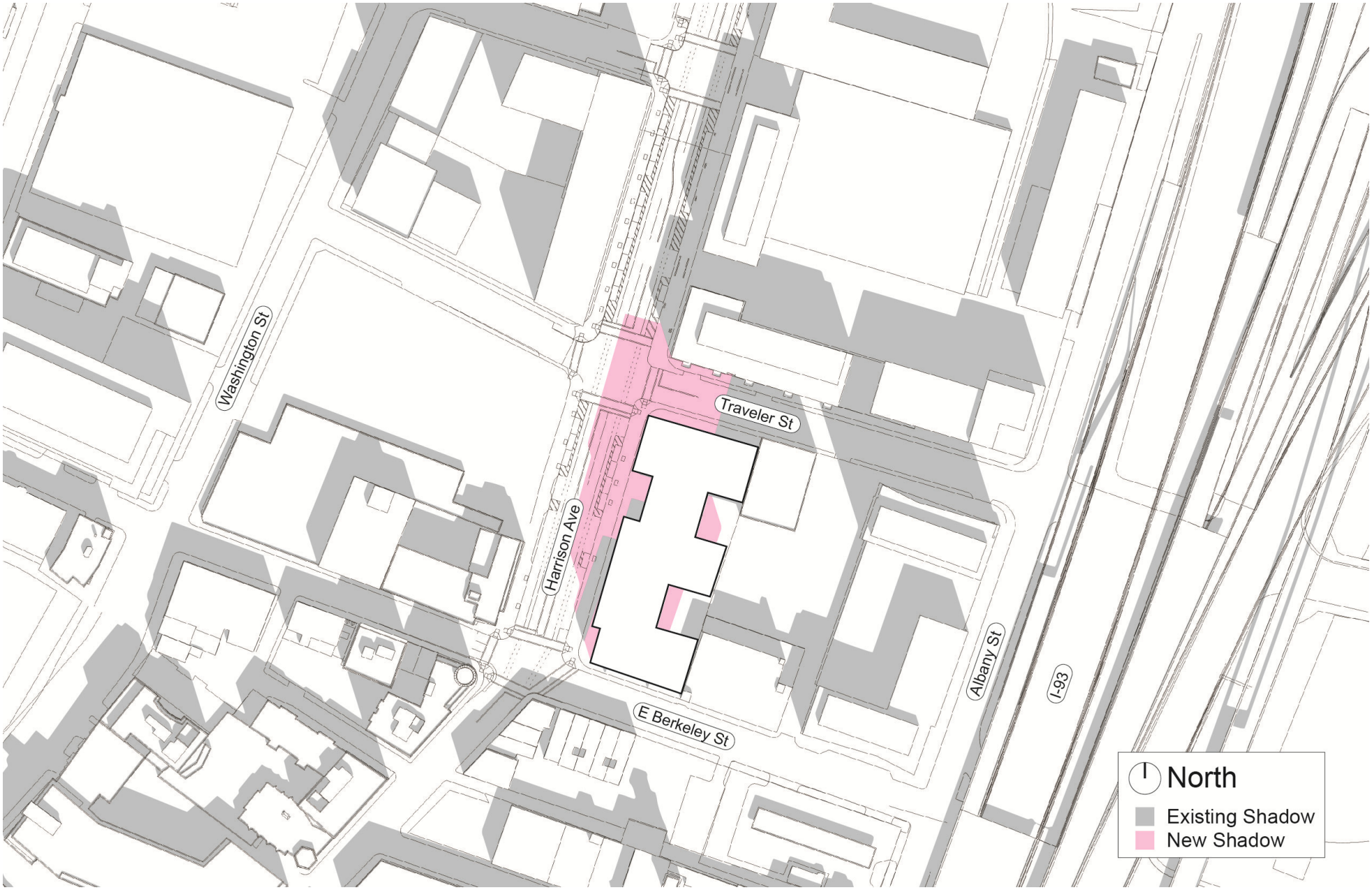
New shadow from the Project will generally be limited to the immediately surrounding streets and sidewalks, as well as the Project's Mid-block Connector. Of the 14 time periods studied, new shadow is cast onto the East Berkeley Street/Harrison Avenue bus stop during the morning of June 21. No new shadow will be cast onto public open spaces. Existing shadow largely define impacts in the vicinity of the Project Site and new shadow from the Project is incremental and minor within the public realm.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-1
Shadow Study, March 21, 9:00 a.m.



370-380 Harrison Avenue Boston, Massachusetts

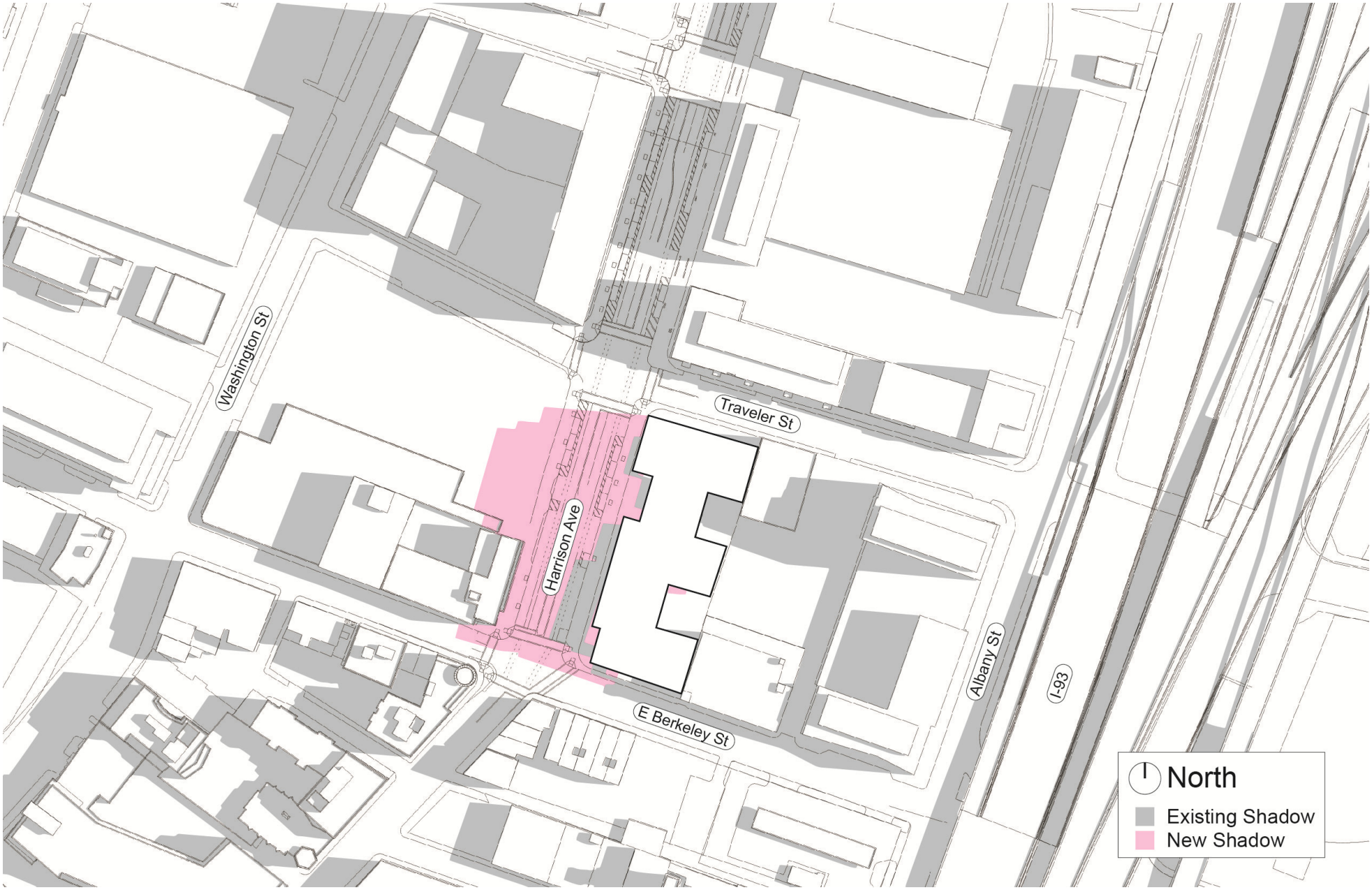
RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-2
Shadow Study, March 21, 12:00 p.m.

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

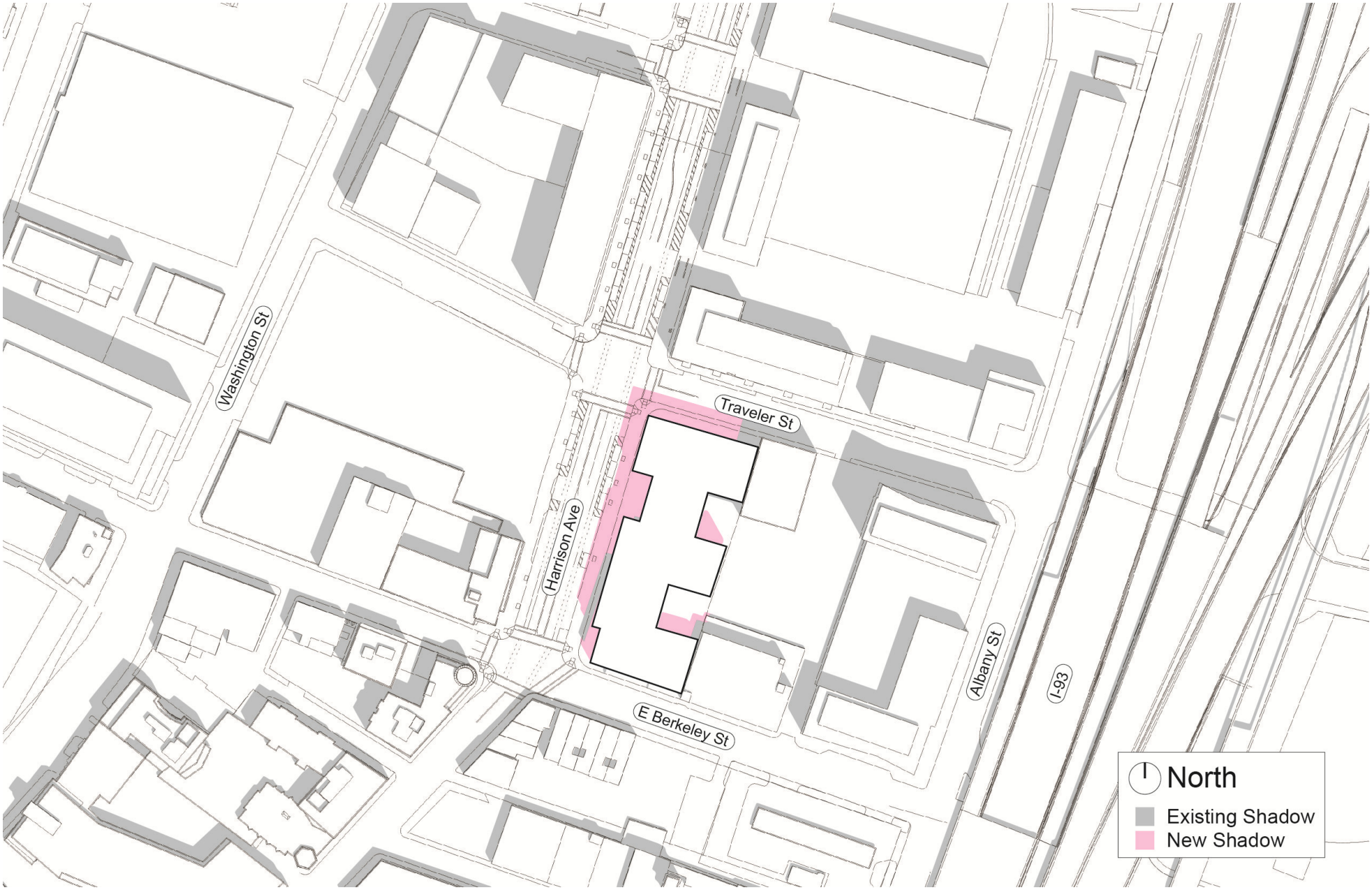
Figure 4.2-3
Shadow Study, March 21, 3:00 p.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

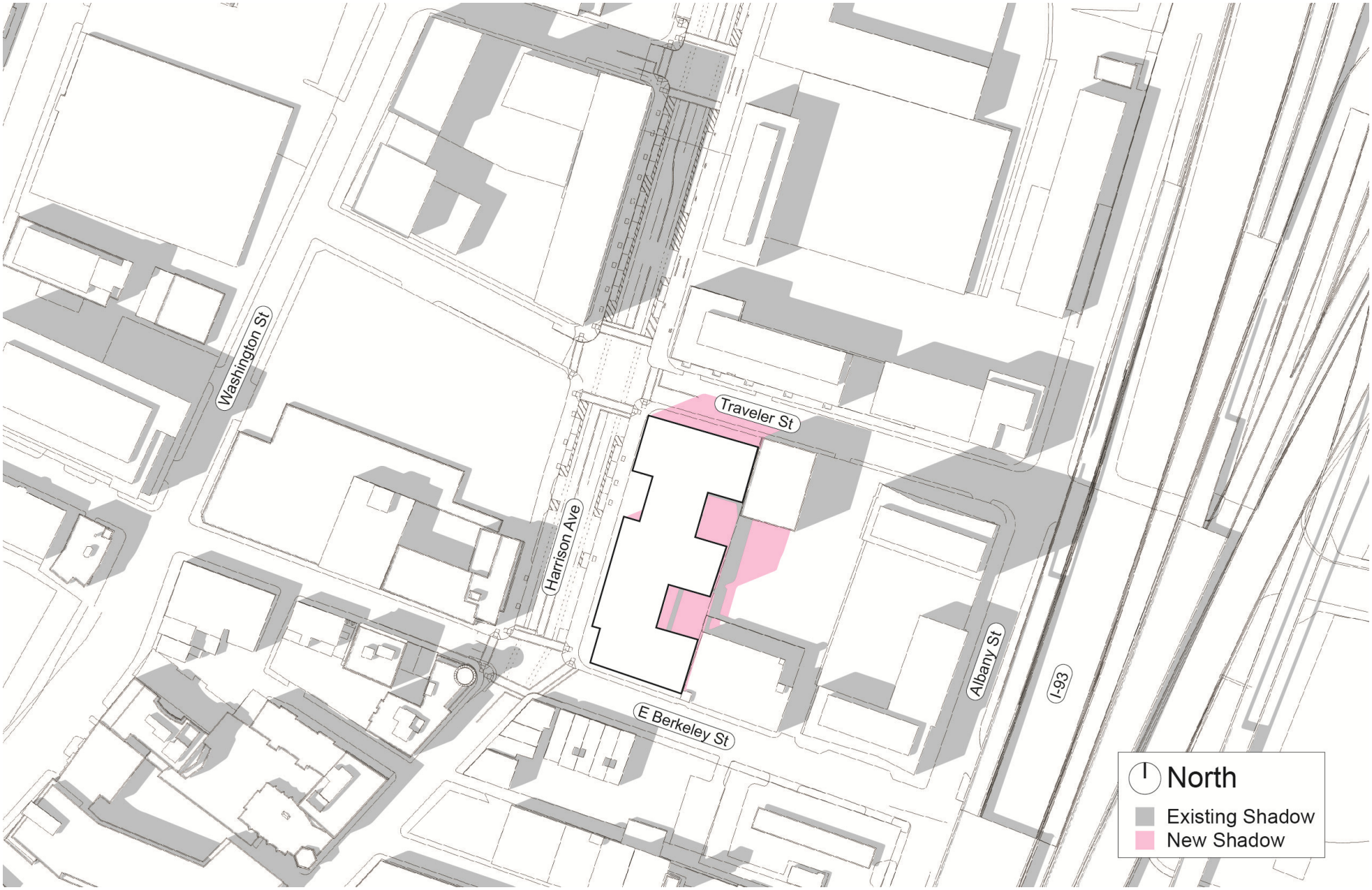
Figure 4.2-4
Shadow Study, June 21, 9:00 a.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

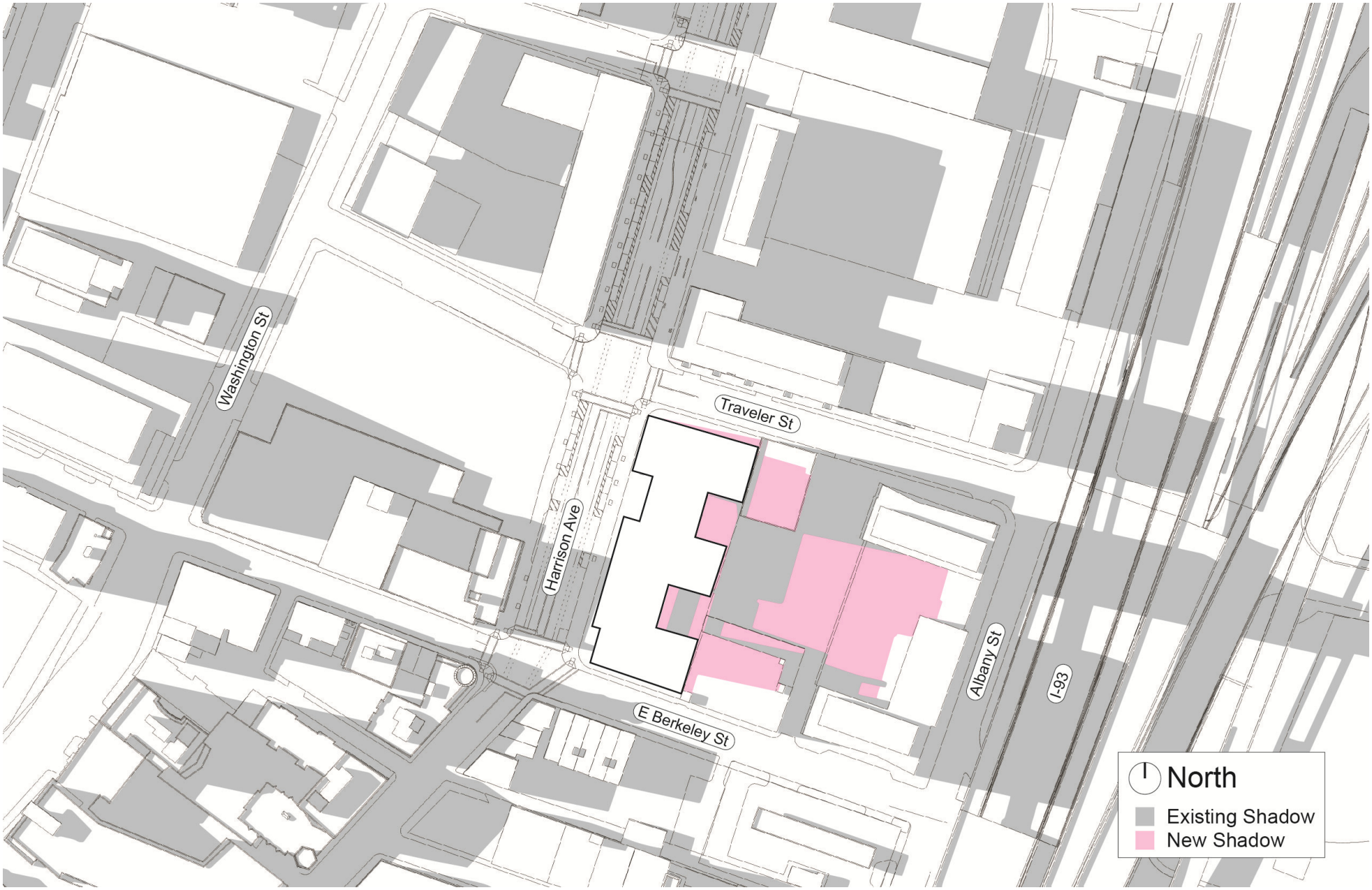
Figure 4.2-5
Shadow Study, June 21, 12:00 p.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

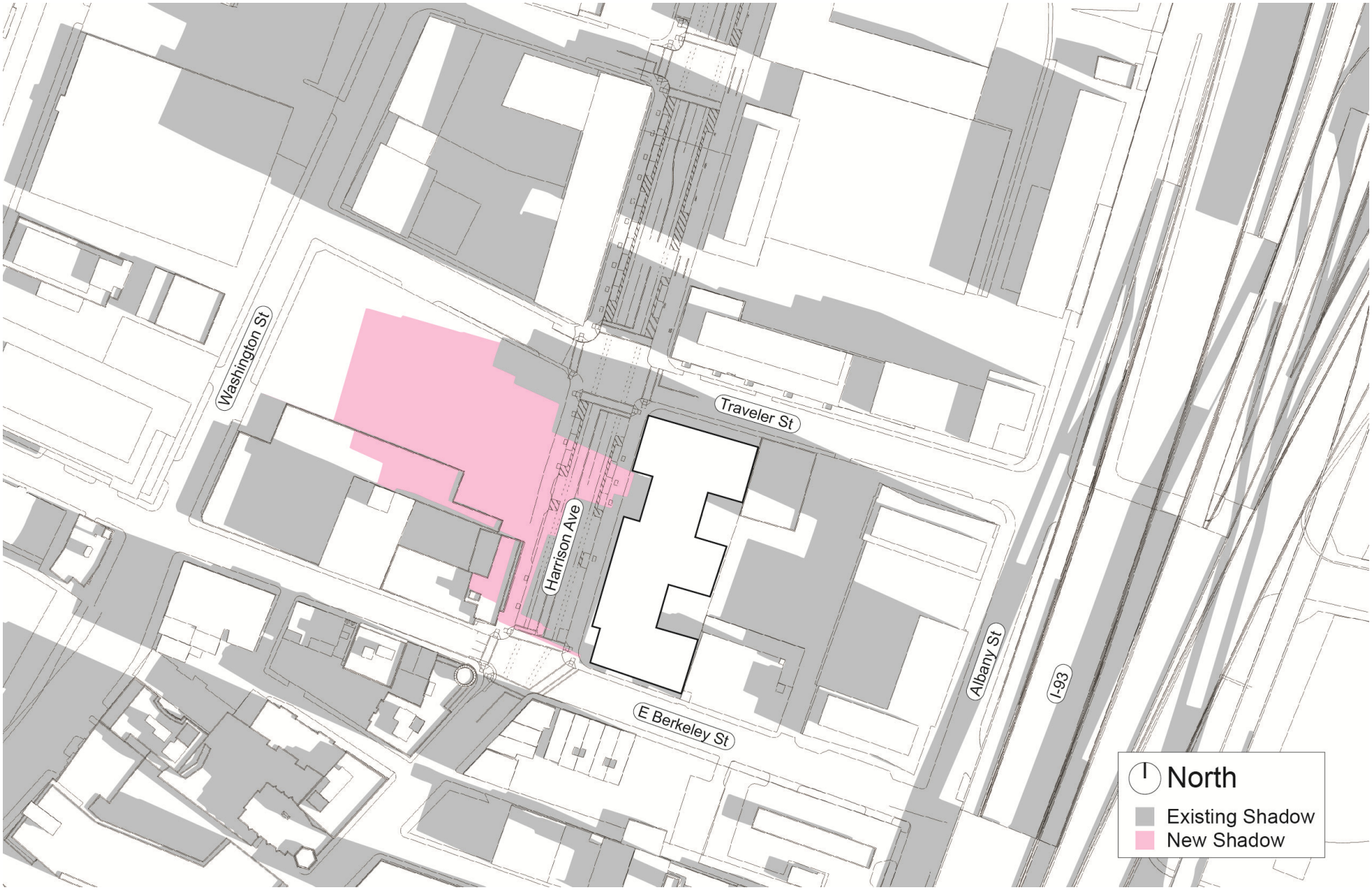
Figure 4.2-6
Shadow Study, June 21, 3:00 p.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

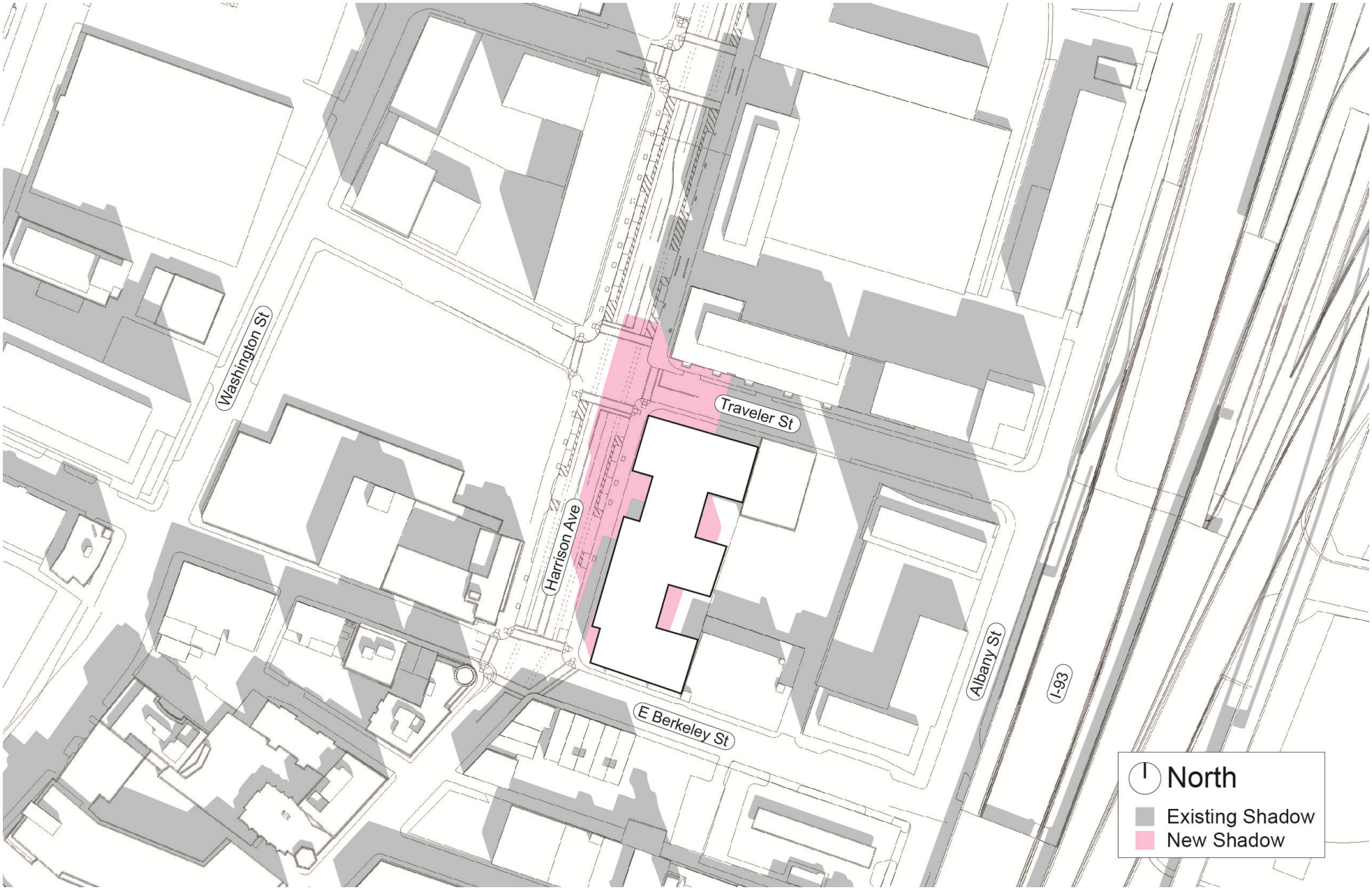
Figure 4.2-7
Shadow Study, June 21, 6:00 p.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-8
Shadow Study, September 21, 9:00 a.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-9
Shadow Study, September 21, 12:00 p.m.

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-10
Shadow Study, September 21, 3:00 p.m.

370-380 Harrison Avenue Boston, Massachusetts

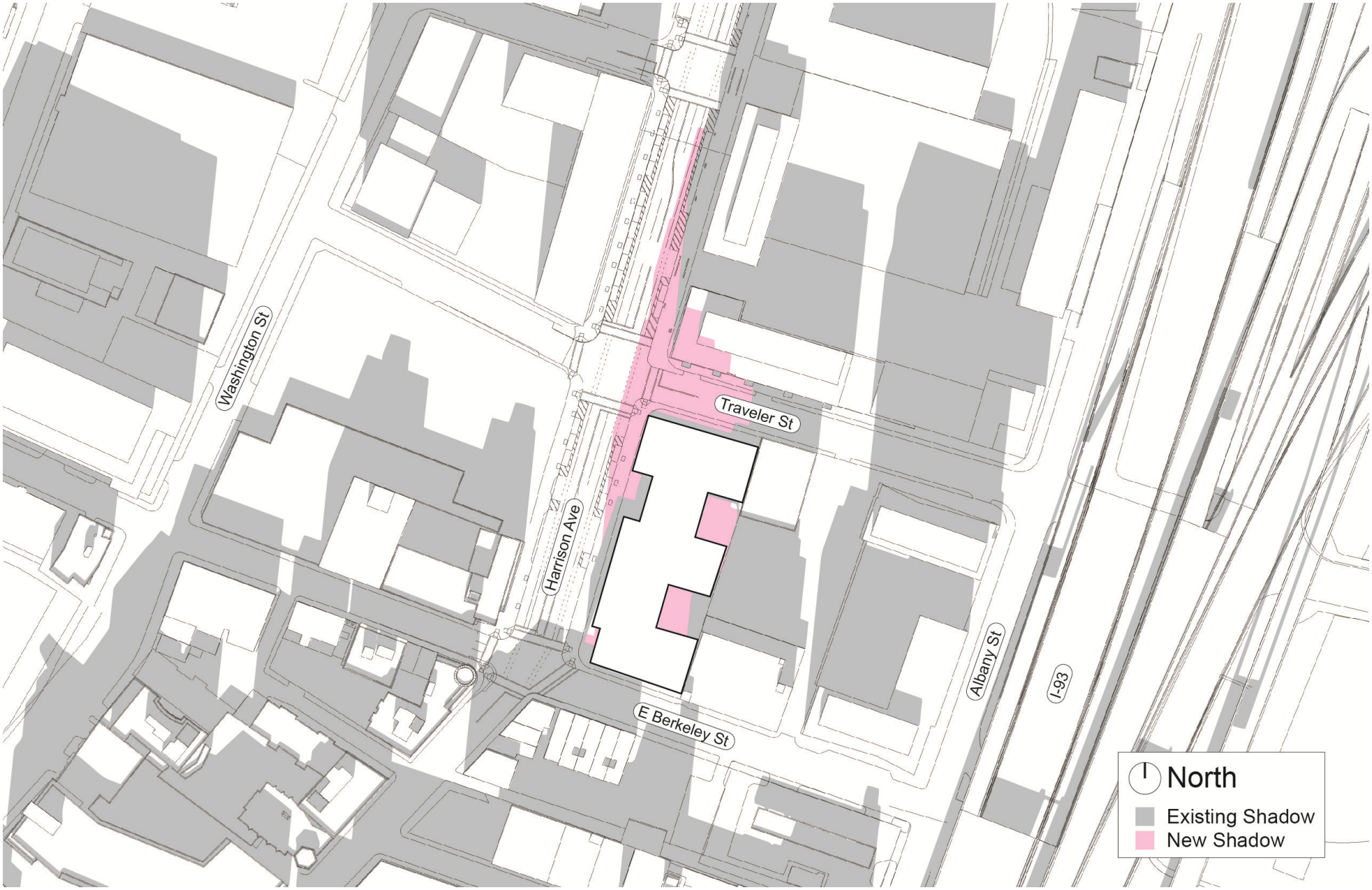
RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-11
Shadow Study, September 21, 6:00 p.m.

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-12
Shadow Study, December 21, 9:00 a.m.



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-13
Shadow Study, December 21, 12:00 p.m.

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 4.2-14
Shadow Study, December 21, 3:00 p.m.

4.3 Daylight Analysis

4.3.1 Introduction

The purpose of the daylight analysis is to estimate the extent to which the Project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of a project site. Because the Project massing is larger than the existing buildings to be removed from the site, the Project will increase daylight obstruction; however, the resulting conditions are typical of the area and impacts from other recent developments in the area.

4.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program[4]. This program measures the percentage of "sky dome" that is obstructed by a project, and is a useful tool in evaluating the net change in obstruction from existing to build conditions at a specific site.

Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent city streets or pedestrian ways, and centered on the proposed building. The façade of the building facing the viewpoint, including heights, setbacks, corners, and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the "sky dome" from the viewpoint chosen. The BRADA program calculates the percentage of daylight that will be obstructed on a scale of zero- to 100-percent based upon the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

Three viewpoints were chosen to evaluate the daylight obstruction for the proposed conditions, one each from Harrison Avenue, East Berkeley Street and Traveler Street. Three area context points were considered in order to provide a basis of comparison to existing, or soon to be existing conditions in the surrounding area. The viewpoint and area context viewpoints were taken in the following locations and are shown on Figure 4.3-1.

- Viewpoint 1: View from Harrison Avenue facing east toward the Project Site.
- Viewpoint 2: View from East Berkeley Street facing north toward the Project Site.
- Viewpoint 3: View from Traveler Street facing south toward the Project Site.

[4] Method developed by Harvey Bryan and Susan Stuebing, computer program developed by Ronald Fergle, Massachusetts Institute of Technology, Cambridge, MA, September 1984.

- Area Context Viewpoint AC1: View from East Berkeley Street facing north toward the existing building at 240 East Berkeley Street.
- Area Context Viewpoint AC2: View from Harrison Avenue facing west toward building under construction at 345 Harrison Avenue.
- Area Context Viewpoint AC3: View from Washington Street facing west toward building approved at 80 East Berkeley Street.

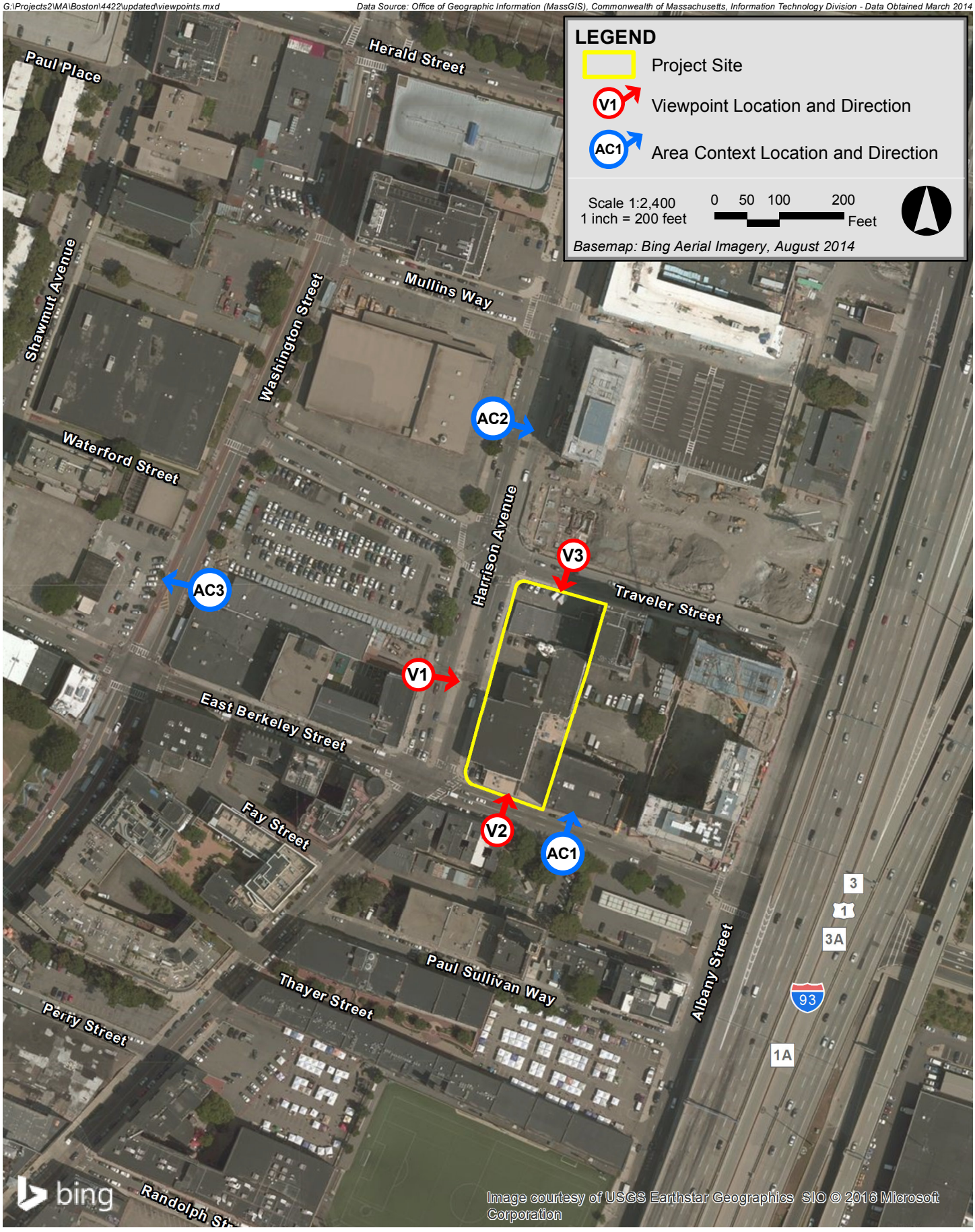
4.3.3 Results

The results for each viewpoint are described in Table 4.3-1. Figures 4.3-2 and 4.3-4 illustrate the BRADA results for each analysis.

Table 4.3-1 Daylight Analysis Results

Viewpoint Locations		*Daylight Obstruction (Percent)*	
		Existing Conditions	*Proposed Conditions*
Viewpoint 1	View from Harrison Avenue facing east toward the Project Site	7.9%	39.1%
Viewpoint 2	View from East Berkeley Street facing north toward the Project Site	38.3%	52.5%
Viewpoint 3	View from Traveler Street facing south toward the Project Site	10.8%	54.4%
Area Context Points			
AC1	View from East Berkeley Street facing north toward the existing building at 240 East Berkeley Street.	87.1%	N/A
AC2	View from Harrison Avenue facing west toward building under construction at 345 Harrison Avenue.	44.8%	N/A
AC3	View from Washington Street facing west toward building approved at 80 East Berkeley Street.	N/A	76.0%

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division - Data Obtained March 2014



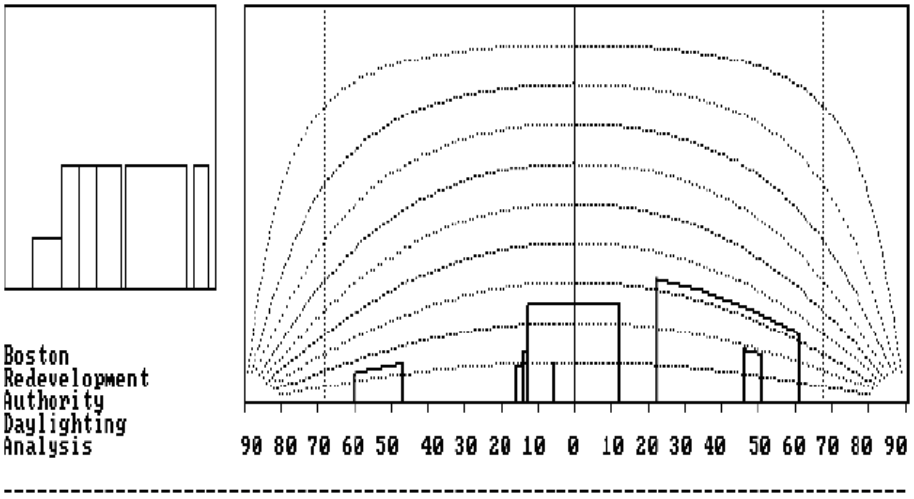
370-380 Harrison Avenue Boston, Massachusetts

Epsilon Associates Inc.

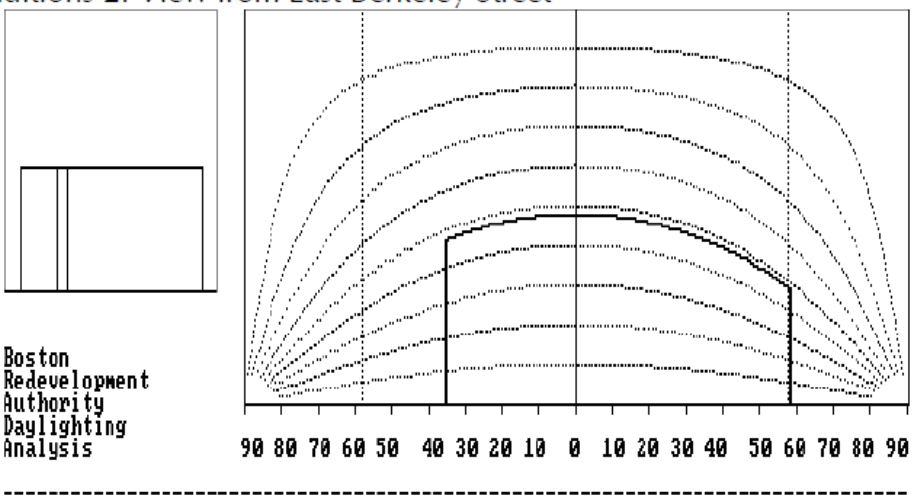
Figure 4.3-1

Viewpoint and Area Context Locations

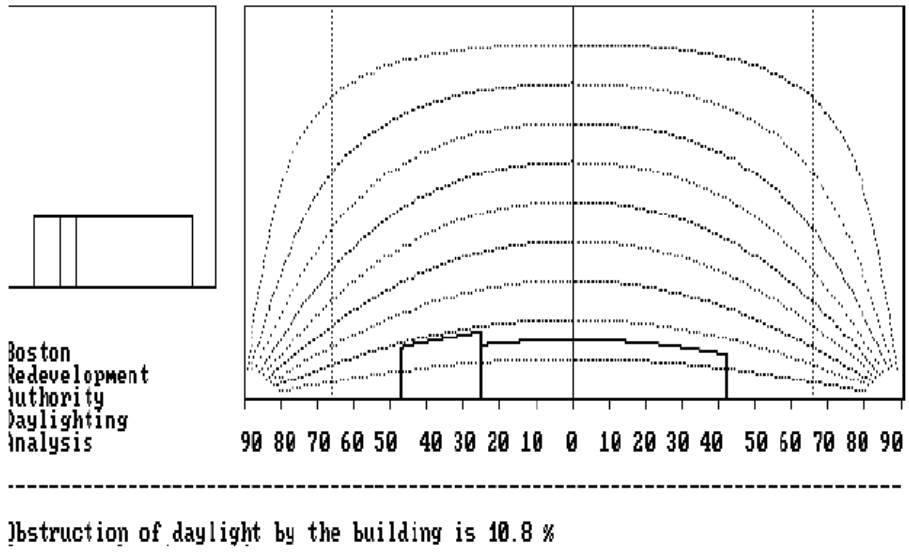
Existing Conditions 1: View from Harrison Avenue



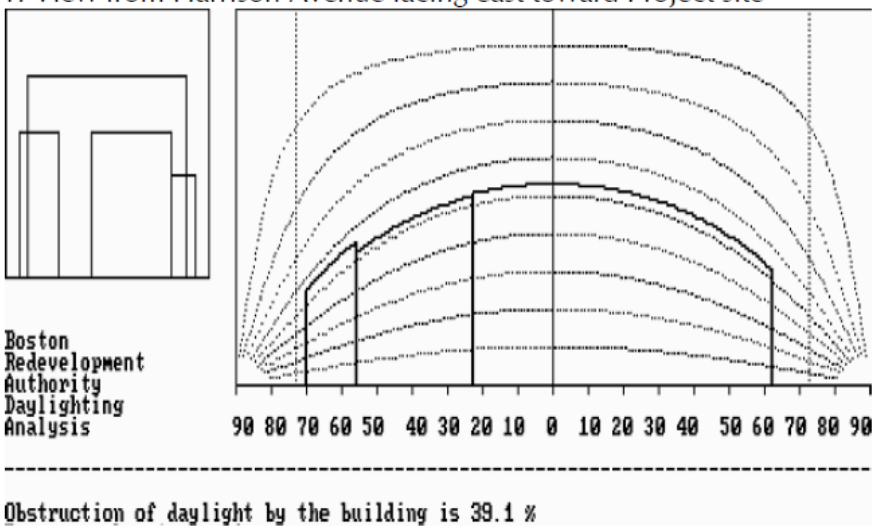
Existing Conditions 2: View from East Berkeley Street



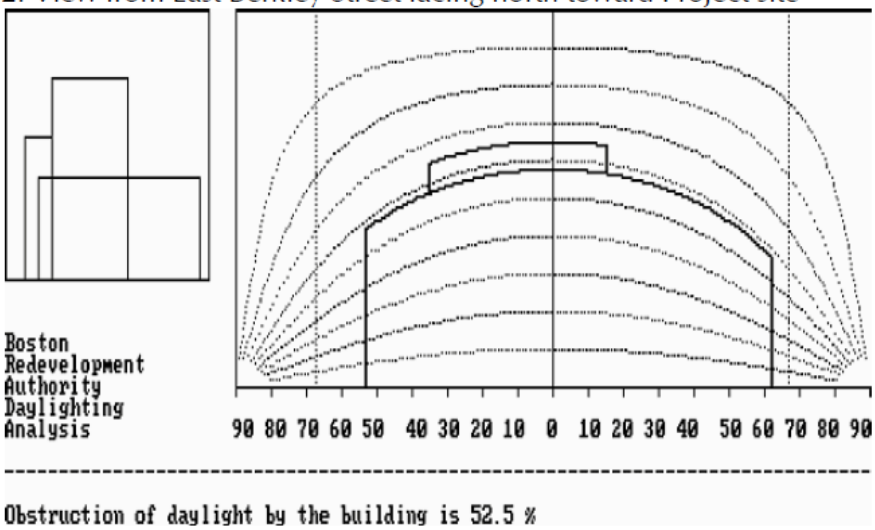
Existing Conditions 3: View from Traveler Street



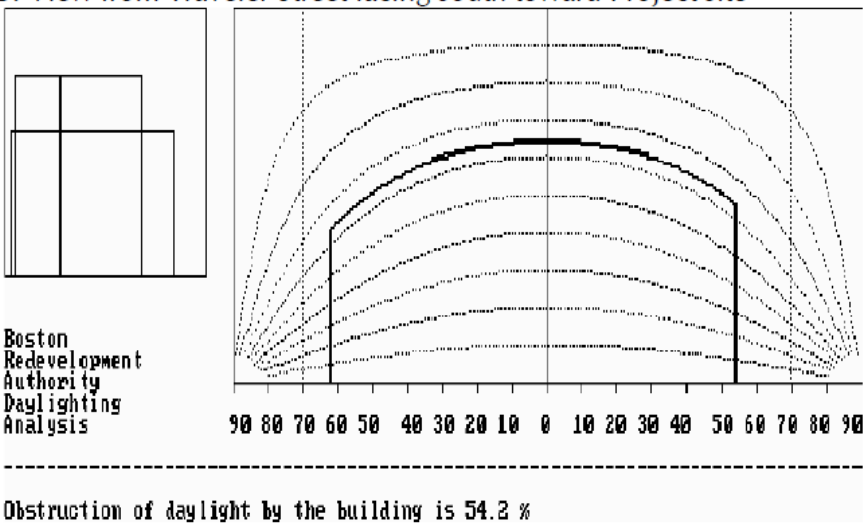
Viewpoint 1: View from Harrison Avenue facing east toward Project site



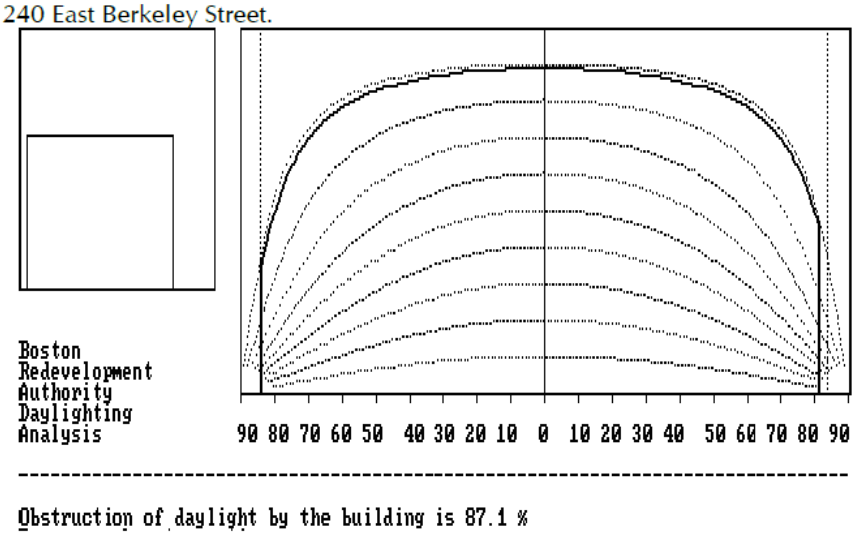
Viewpoint 2: View from East Berkley Street facing north toward Project site



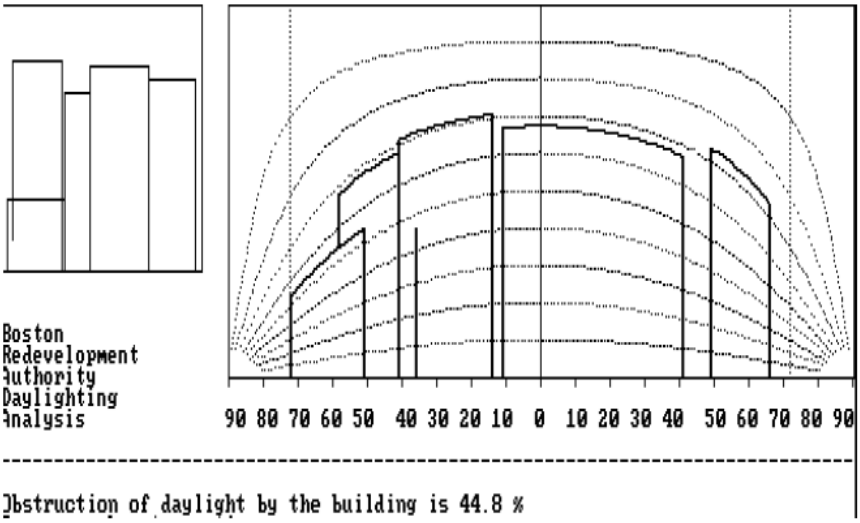
Viewpoint 3: View from Traveler Street facing south toward Project site



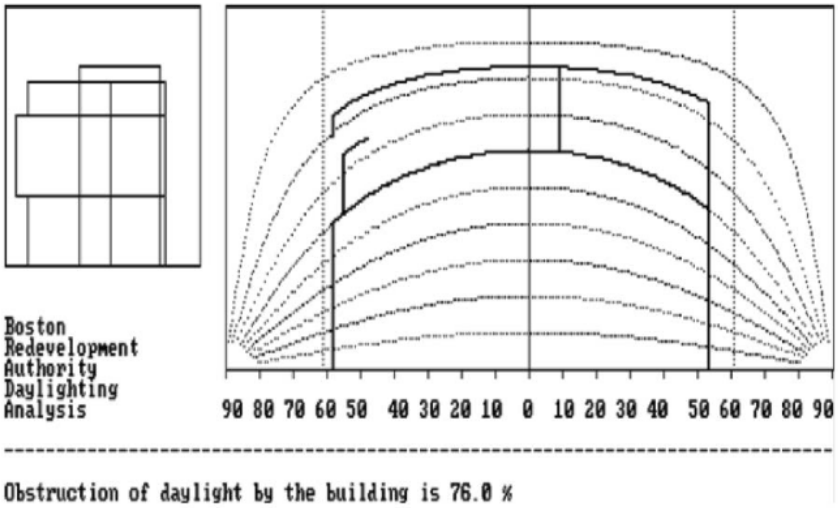
Area Context Viewpoint AC1: View from East Berkeley Street facing north toward the existing building at 240 East Berkeley Street.



Area Context Viewpoint AC2: View from Harrison Avenue facing west toward building to be constructed at 345 Harrison Avenue.



Area Context Viewpoint AC3: View from Washington Street facing west toward building to be constructed at 80 East Berkeley Street.



Viewpoint 1 – Harrison Avenue

Harrison Avenue runs along the westerly edge of the Project Site. Viewpoint 1 is from the center of Harrison Avenue looking eastward toward the Project Site. The existing conditions have a daylight obstruction value of 7.9 percent because of the size of the buildings and the paved are in the middle of the site. The Project will result in a daylight obstruction value of 39.1 percent. This obstruction value is more than the existing condition, but less than that of the Area Context buildings.

Viewpoint 2 – East Berkeley Street

East Berkeley Street runs along the southerly edge of the Project Site. Viewpoint 2 is from the center of East Berkeley Street facing north toward the Project Site. The existing daylight obstruction is 38.3 percent. The Project will result in a daylight obstruction value of 52.5 percent. Although this obstruction value is an increase over existing conditions, it is consistent with existing buildings in the area, including the Area Context buildings.

Viewpoint 3 – Traveler Street

Traveler Street runs along the northerly edge of the Project Site. Viewpoint 3 is from the center of East Berkeley Street facing south toward the Project Site. The Project will result in a daylight obstruction value of 54.4 percent, compared to 10.8 percent in the existing condition. Although this obstruction value is an increase over existing conditions, it is consistent with existing buildings in the area, including the Area Context buildings.

Area Context Viewpoints

The Project area currently consists of low to mid-rise commercial and residential buildings. To provide a larger context for comparison of daylight conditions, obstruction values were calculated for the three Area Context Viewpoints described above, with locations shown on Figure 4.3-1. Area Context Conditions are shown on Figure 4.3-3. The daylight obstruction values ranged from 44.8 percent for Area Context 2 to 87.1 percent for Area Context 1.

4.3.4 Conclusions

The daylight analysis conducted for the Project describes proposed daylight obstruction conditions at the Project Site and existing conditions in the surrounding area. The results of the BRADA analysis indicate that while the development of the Project will result in increased daylight obstruction over existing conditions, the resulting conditions at most viewpoints will be similar to or lower than the daylight obstruction values within the surrounding area. The daylight obstruction when viewing the Project from adjacent streets is consistent with area buildings and is typical of densely developed urban areas.

4.4 Solar Glare

It is not anticipated that the Project will include the use of reflective glass or other reflective materials on the building facades that would result in adverse impacts from reflected solar glare from the Project.

4.5 Air Quality Analysis

A microscale air quality analysis was included in Section 3.2.5 of the PNF. The study results showed that all predicted CO concentrations are well below one-hour and eight-hour National Ambient Air Quality Standards (NAAQS) at intersections most impacted by vehicle trips related to the Project..

In addition, it is expected that the majority of stationary sources (boilers, engines, etc.) may be subject to the Massachusetts Department of Environmental Protection's Environmental Results Program (ERP). The Proponent will complete the required applications and submittals for the equipment, as necessary.

4.6 Stormwater/Water Quality

Chapter 8 includes information on stormwater and water quality.

4.7 Flood Hazard Zones/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for the site - Community Panel Numbers 25025C0077J and 25025C0079J – effective March 16, 2016 indicate the FEMA Flood Zone Designations for the site area. The FIRMs show that the Project is outside of the 500-year flood zone.

The site is developed and does not contain wetlands.

4.8 Geotechnical Impacts

4.8.1 Subsurface Soil and Bedrock Conditions

Results from test pit and boring subsurface explorations performed at the site in June 2016 indicate that the ground surface is underlain by an approximately 12 to 16-foot thickness of granular fill. The granular fill was observed to be underlain by a discontinuous organic deposit which generally varies in thickness from 1.5 to 4 feet, but was observed in one exploration to be 11.5 feet in thickness. The fill and/or organics extend to depths ranging from about 16 to 23.5 feet below ground surface and are directly underlain by a marine clay deposit which was observed to transition with depth from very stiff to firm in density. The borings were terminated within the marine clay at depths ranging from 30 to 60 feet below ground surface.

4.8.2 Groundwater

Groundwater within the recently advanced borings was observed to vary from 7 to 11.5 feet below existing ground surface, corresponding to a range between Elevation +9.6 and Elevation +5.8 Boston City Base (BCB). Groundwater levels monitored in the observation wells installed in boreholes ranged from about 7.8 to 10.1 feet below existing ground surface, corresponding to levels ranging from about Elevation +6.5 to Elevation +7.6 BCB. According to information contained on the Boston Groundwater Trust online database, groundwater levels in the general vicinity of the Project Site have been observed to range from about Elevation +5.1 to Elevation +8.4 BCB over the past 11 years. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns.

The Project is located in the Groundwater Conservation Overlay District (GCOD) and will be designed and constructed to comply with requirements of Article 32 of the Code. Preliminary discussions with BWSC have confirmed that the Project requires groundwater recharge. Approval for the Project in accordance with Article 32 will be obtained by virtue of PDA plan approval.

Some local dewatering may be required during the construction process to manage and remove surface water (precipitation) runoff into the open/uncovered below grade building footprint. To the extent possible, the Project will attempt to recharge/infiltrate that water into the ground outside the building footprint. Construction dewatering will be performed in accordance with applicable Massachusetts Water Resources Authority (MWRA), EPA, BWSC and MassDEP regulations and policies. Waterproofing will be installed against the exterior face of the portions of the garage which extend below observed and predicted groundwater levels as a permanent groundwater cut-off measure.

Measures will be implemented to maintain groundwater levels outside the Project Site boundary. Groundwater levels will be monitored prior to, during, and following construction to ensure adequate groundwater levels are maintained within the Project vicinity.

4.8.3 Proposed Conditions

Excavation will likely involve removal and disposal of urban fill, natural soil deposits, and bedrock. Based on preliminary analytical laboratory results, the existing urban soils may require special handling for off-site disposal. The underlying natural soils and bedrock soils may not require special management and disposal, based on available data. Soil management will be conducted in compliance with local, state, and federal regulations, and with the Massachusetts Contingency Plan (310 CMR 40.0000) (MCP). Prior to excavation, the on-site soils will be pre-characterized for off-site disposal and a soil management plan will be developed.

In consideration of the natural marine clay deposits on site, foundation support may be provided by footing and/or mat foundations that bear directly on the undisturbed, marine clay deposit. Sealing of perimeter foundations into the relatively impermeable marine clay deposit in conjunction with an under-slab foundation drainage system will allow for conventional slab-on-grade construction methods. Perimeter foundation walls will be protected against groundwater intrusion by a membrane type waterproofing extending from the bottom of the perimeter wall footing to the ground surface.

4.9 Solid and Hazardous Waste

4.9.1 Site Conditions

A documented release of #2 fuel oil was reported at the site on or about March 4, 1993 and Release Tracking Number (RTN) 3-4224 was assigned to the site. MCP compliance related to RTN 3-4224 was achieved on November 10, 1999 with the filing of a Class A-2 Response Action Outcome (RAO) with e MassDEP. The RAO asserts that a condition of No Significant Risk existed at the site and that the RAO fulfilled all MCP obligations. Site closure does not rely on an Activity and Use Limitation (AUL) and no further Response Actions were necessary to maintain either a level of No Significant Risk or maintain a Permanent Solution. Additional historic site remediation activities conducted under the direction of MassDEP included the closure of underground storage tanks and removal of Non-Aqueous Phase Liquids (NAPL) impacted soils.

Additional characterization of the site's soil and groundwater will be conducted and, if necessary, soil and groundwater will be managed in accordance with applicable local, state, and federal laws and regulations. During excavation, all soils exported from the site will be managed for off-site disposal in accordance with the current regulations and policies of MassDEP.

Surveys of the two buildings on the site were completed in June 2016. The surveys, which also relied upon the results of previous inspections in 2014 and 2015, included inspections of each building for the presence of: asbestos-containing building materials (ACBM); lead-based paint (LBP); polychlorinated biphenyls (PCBs); mercury containing components; and miscellaneous hazardous materials.

The surveys conclude that ACBM was found in both buildings; LBP was found in the 370 Harrison Avenue building; thermostats with mercury tubes were found in 380 Harrison Avenue; and miscellaneous materials, such as paint thinner, engine oil and fire extinguishers were also found. All materials will be removed in accordance with local, state, and federal regulations.

4.9.2 Operational Solid and Hazardous Wastes

The Project will generate solid waste typical of residential and commercial/retail uses. Solid waste is expected to include wastepaper, cardboard, glass bottles and food. Recyclable

materials will be recycled through a program implemented by building management. The Project will generate approximately 357 tons per year of solid waste.

With the exception of household hazardous wastes typical of residential and commercial/retail developments (e.g., cleaning fluids and paint), the Project will not involve the generation, use, transportation, storage, release, or disposal of potentially hazardous materials. Typical waste generated by the uses will be handled in compliance with all local, state and federal regulations.

4.9.3 Recycling

The Proponent has developed an enhanced recyclable materials collection program for building residents and building maintenance. The building will include single-stream recycling collection for standard recycling items such as beverage containers, bottles, jars, plastic, paper and cardboard. The building will also include a collection area for nonstandard recyclable materials, including clothing, batteries and light bulbs.

4.10 Noise Impacts

4.10.1 Introduction

A sound level assessment was conducted which included a baseline sound monitoring program to measure existing sound levels in the vicinity of the Project, computer modeling to predict operational sound levels from proposed mechanical equipment, and a comparison of future Project sound levels to applicable City of Boston Zoning District Noise Standards.

This analysis, which is consistent with BPDA requirements for noise studies, indicates that with appropriate noise controls, predicted sound levels from the Project will comply with local noise regulations.

4.10.2 Noise Terminology

There are several ways in which sound (noise) levels are measured and quantified, all of which use the logarithmic decibel (dB) scale. The following section defines the noise terminology used in this analysis.

The decibel scale is logarithmic to accommodate the wide range of sound intensities observed in the environment. A property of the decibel scale is that the sound pressure levels of two distinct sounds are not purely additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a three-decibel increase (53 dB), not a doubling (100 dB). Thus, every three-decibel change in sound level represents a doubling or halving of sound energy. A change in sound level of less than three dB is generally imperceptible to the human ear.

Another property of the decibel scale is that if one source of noise is 10 dB (or more) louder than another source, then the total combined sound level is simply that of the louder source (i.e., the quieter source contributes negligibly to the overall sound level). For example, a source of sound at 60 dB plus another source at 47 dB is 60 dB.

The sound level meter used to measure noise is a standardized instrument.[5] It contains "weighting networks" to adjust the frequency response of the instrument to approximate that of the human ear under various conditions. One network is the A-weighting network (there are also B- and C-weighting networks), which most closely approximates how the human ear responds to sound as a function of frequency, and is the accepted scale used for community sound level measurements. Sounds are frequently reported as detected with the A-weighting network of the sound level meter in dBA. A-weighted sound levels emphasize middle frequencies (i.e., middle pitched—around 1,000 Hertz sounds), and de-emphasize lower and higher frequencies.

Because sounds in the environment vary with time, they are usually described with more than simply a single number. Two methods are used for describing variable sounds, exceedance levels and the equivalent level, both of which are derived from a large number of moment-to-moment, A-weighted sound-level measurements. Exceedance levels are values from the cumulative amplitude distribution of all of the sound levels observed during a measurement period. Exceedance levels are designated L_n, where n can have a value of 0 to 100 in terms of percentage. Several sound level metrics that are commonly reported in community noise studies are described below.

- L_{90} is the sound level in dBA exceeded 90 percent of the time during the measurement period. The L_{90} is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when there are no obvious nearby intermittent noise sources.

- L_{50} is the median sound level, the sound level in dBA exceeded 50 percent of the time during the measurement period.

- L_{10} is the sound level in dBA exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles.

- L_{max} is the maximum instantaneous sound level observed over a given period.

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[5] *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983, published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

- L_{eq}, the equivalent level, is the level of a hypothetical steady sound that would have the same energy (i.e., the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level represents the time average of the fluctuating sound pressure, but because sound is represented on a logarithmic scale and the averaging is done with linear mean square sound pressure values, the L_{eq} is mostly determined by occasional loud, intrusive noises.

In the design of noise controls, which do not function quite like the human ear, it is important to understand the frequency spectrum of the noise source of interest. The spectra of noises are usually stated in terms of octave-band sound pressure levels, in dB, with the frequency bands being those established by standard (American National Standards Institute [ANSI] S1.11, 1986). To facilitate the noise control design process, the estimates of noise levels in this analysis are also presented in terms of octave-band sound pressure levels. Octave-band measurements and modeling are used in assessing compliance with the City of Boston noise regulations.

4.10.3 Noise Regulations and Criteria

The City of Boston has both a noise ordinance and noise regulations. Chapter 16 §26 of the Boston Municipal Code sets the general standard for noise that is unreasonable or excessive: louder than 50 decibels between the hours of 11:00 p.m. and 7:00 a.m., or louder than 70 decibels at all other hours. The Boston Air Pollution Control Commission (APCC) has adopted regulations based on the City's ordinance - "Regulations for the Control of Noise in the City of Boston", which distinguish among residential, business, and industrial districts in the city. In particular, APCC Regulation 2 is applicable to the sounds from the Project and is considered in this noise study.

Table 4.10-1 below presents the "Zoning District Noise Standards" contained in Regulation 2.5 of the APCC "Regulations for the Control of Noise in the City of Boston," adopted December 17, 1976. These maximum allowable sound pressure levels apply at the property line of the receiving property. The "Residential Zoning District" limits apply to any lot located within a residential zoning district or to any residential use located in another zone except an Industrial Zoning District, according to Regulation 2.2. Similarly, per Regulation 2.3, business limits apply to any lot located within a business zoning district not in residential or institutional use.

Table 4.10-1 City Noise Standards, Maximum Allowable Sound Pressure Levels

Octave-band Center	*Residential Zoning District*		*Residential Industrial Zoning District*		*Business Zoning District*	*Industrial Zoning District*
Frequency (Hz)	Daytime (dB)	All Other Times (dB)	Daytime (dB)	All Other Times (dB)	Anytime (dB)	Anytime (dB)
32	76	68	79	72	79	83
63	75	67	78	71	78	82
125	69	61	73	65	73	77
250	62	52	68	57	68	73
500	56	46	62	51	62	67
1000	50	40	56	45	56	61
2000	45	33	51	39	51	57
4000	40	28	47	34	47	53
8000	38	26	44	32	44	50
A-Weighted (dBA)	**60**	**50**	**65**	**55**	**65**	**70**

Notes:
1. Noise standards from Regulation 2.5 "Zoning District Noise Standards", City of Boston Air Pollution Control Commission, "Regulations for the Control of Noise in the City of Boston", adopted December 17, 1976.
2. All standards apply at the property line of the receiving property.
3. dB and dBA based on a reference pressure of 20 micropascals.
4. Daytime refers to the period between 7:00 a.m. and 6:00 p.m. daily, except Sunday.

4.10.4 Existing Conditions

A background noise level survey was conducted to characterize the existing "baseline" acoustical environment in the vicinity of the Project. Existing noise sources in the vicinity of the Project Site include: steady vehicular traffic along I-93 and Albany Street; vehicular traffic along local roadways (including Harrison Avenue, East Berkeley Street, and Traveler Street); birds; vegetation rustle; construction (daytime only); wind; occasional mechanical noise from nearby structures; and the general city soundscape.

4.10.4.1 Noise Monitoring Methodology

Since noise impacts from the Project on the community will be highest when background noise levels are the lowest, the study was designed to measure community noise levels under conditions typical of a "quiet period" for the area. Daytime measurements were scheduled to avoid peak traffic conditions. Sound level measurements were made on Thursday, September 29, 2016 during the daytime (12:30 p.m. to 3:00 p.m.) and on Friday, September 30, 2016 during nighttime hours (12:30 a.m. to 2:30 a.m.). All measurements were 20 minutes in duration.

Sound levels were measured at publicly accessible locations at a height of five feet (1.5 meters) above ground level, under low wind conditions, and with dry roadway surfaces. Wind speed measurements were made with a Davis Instruments TurboMeter electronic

wind speed indicator, and temperature and humidity measurements were made using a General Tools digital psychrometer. Unofficial observations about meteorology or land use in the community were made solely to characterize the existing sound levels in the area and to estimate the noise sensitivity at properties near the Project Site.

4.10.4.2 Noise Monitoring Locations

The selection of the noise monitoring locations was based upon a review of zoning and land use in the Project area. Four noise monitoring locations were selected as representative sites to obtain a sampling of the ambient baseline noise environment. These measurement locations are depicted on Figure 4.10-1 and described below.

- **Location 1** is at the eastern end of East Berkeley Street near the intersection of Albany Street, and is representative of the closest residential use east of the Project (i.e. Troy Boston Apartments).

- **Location 2** is along East Berkeley Street directly south of the proposed Project. This location is representative of the closest residential use south of the Project (i.e., The Pine Street Inn).

- **Location 3** is along Harrison Avenue, in front of 160 East Berkeley Street, representative of the closest residential receptors west of the Project (i.e., The Lofts at East Berkeley).

- **Location 4** is on the east side of the Sepia Condominiums north of Traveler Street, representative of the residential receptors north of the Project.

4.10.4.3 Noise Monitoring Equipment

A Larson Davis Model 831 sound level meter equipped with a PCB PRM831 Type I preamplifier, a PCB 377B20 half-inch microphone, and manufacturer-provided windscreen was used to collect background sound pressure level data. This instrumentation meets the "Type 1 - Precision" requirements set forth in ANSI S1.4 for acoustical measuring devices. The measurement equipment was calibrated in the field before and after the surveys with a Larson Davis CAL200 acoustical calibrator which meets the standards of IEC 942 Class 1L and ANSI S1.40-1984. Statistical descriptors (L_{eq}, L_{90}, etc.) were calculated for each 20-minute sampling period, with octave-band sound levels corresponding to the same data set processed for the broadband levels.

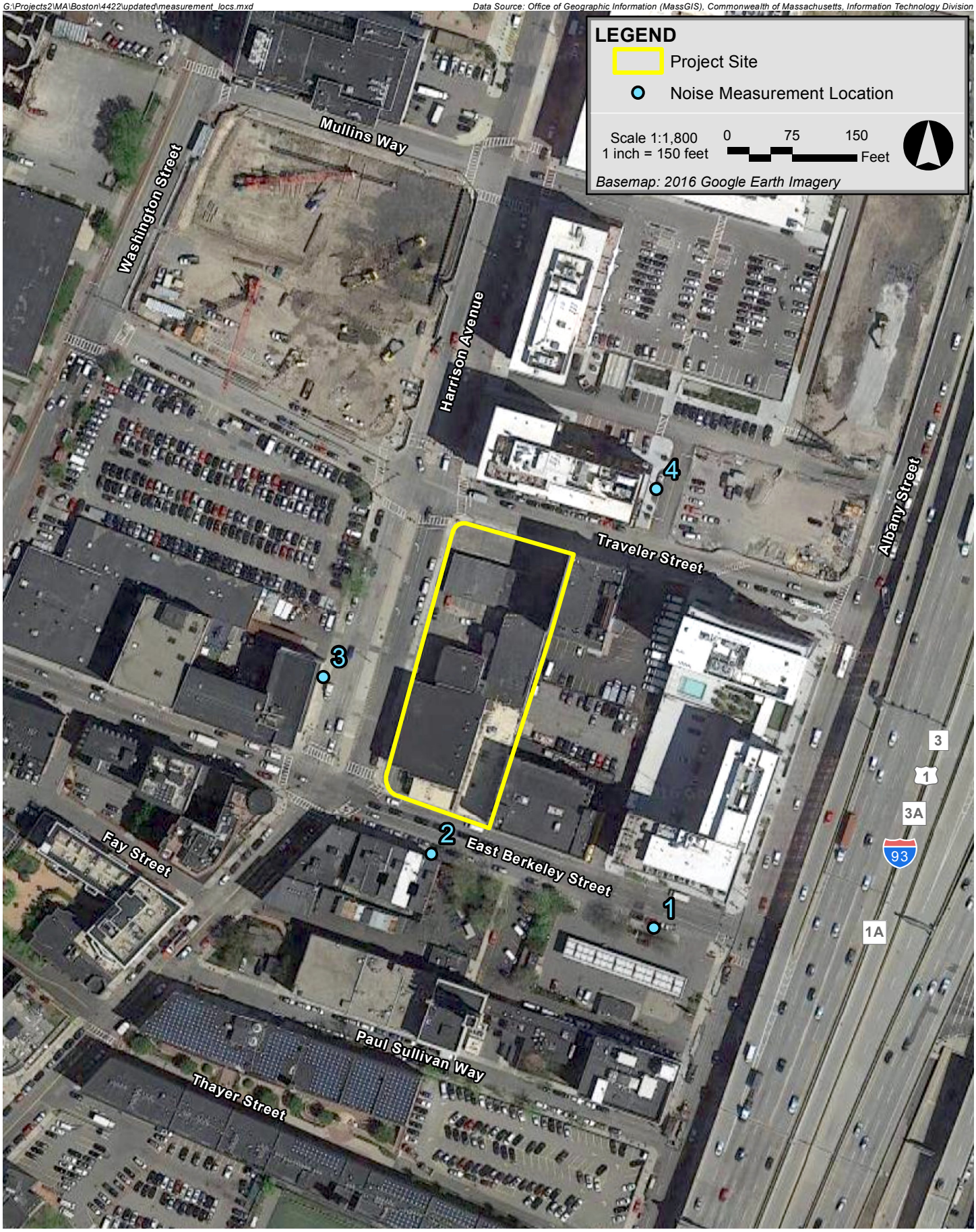

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Figure 4.10-1

Noise Measurement Locations

4.10.4.4 Measured Background Noise Levels

Baseline noise monitoring results are presented in Table 4.10-2, and summarized below:

- The daytime residual background (L90) measurements ranged from 63 to 69 dBA;
- The nighttime residual background (L90) measurements ranged from 57 to 65 dBA;
- The daytime equivalent level (Leq) measurements ranged from 68 to 71 dBA; and
- The nighttime equivalent level (Leq) measurements ranged from 62 to 71 dBA.

4.10.5 Future Conditions

4.10.5.1 Overview of Potential Project Noise Sources

The primary sources of continuous sound exterior to the Project will consist of ventilation, heating, cooling, and emergency power noise sources. Multiple noise sources will be located on the rooftops and there will be an exhaust louver which will discharge at the exit of the underground garage on the northeast corner of the Project.

Table 4.10-3 provides an anticipated list of the major sources of sound. Sound power levels used in the acoustical modeling of each piece of equipment are presented in Table 4.10-4. Sound power level data were provided by the manufacturer of each piece of equipment except for the emergency generator. The sound power levels for the canopy of the emergency generator were calculated using the sound pressure levels provided by the manufacturer at reference distances.

The Project includes various noise-control measures that are necessary to achieve compliance with the applicable noise regulations. As the design progresses, specifications for mechanical equipment may change; however, appropriate measures will be taken to ensure compliance with the City Noise Standards. The garage exhaust fans will each be attenuated through five-foot silencers and further attenuated at the exhaust outlet louver at the garage exit. The sound levels from the cooling towers and energy recovery units will be mitigated either through a sound mitigation package supplied by the vendor or through the selection of quieter equipment from an alternate manufacturer. The emergency generator sound levels will be controlled using an enclosure and an exhaust silencer. To further limit impacts from the standby generator, its required periodic, routine testing will be conducted during daytime hours, when background sound levels are highest. A summary of the noise mitigation proposed for the Project is presented in Table 4.10-5.

Table 4.10-2 Summary of Measured Background Noise Levels – September 29, 2016 (Daytime) & September 30, 2016 (Nighttime)

Location	*Period*	*Start Time*	L_{eq}	L_{max}	L_{10}	L_{50}	LA_{90}	*L_{90} Sound Pressure Level by Octave-Band Center Frequency (Hz)*								
								31.5 Hz	*63 Hz*	*125 Hz*	*250 Hz*	*500 Hz*	*1k Hz*	*2k Hz*	*4k Hz*	*8k Hz*
			dBA	dBA	dBA	dBA	dBA	dB	dB	dB	dB	dB	dB	dB	dB	dB
ST-1	Day	12:34 PM	70	80	72	70	68	74	71	68	63	63	65	59	49	38
ST-2	Day	1:06 PM	68	83	70	67	64	70	67	63	59	59	61	56	47	37
ST-3	Day	1:37 PM	68	91	69	65	63	66	67	63	59	58	60	54	45	34
ST-4	Day	2:26 PM	70	76	72	70	69	69	71	66	63	63	66	60	51	41
ST-1	Night	1:05 AM	66	81	68	66	63	68	66	61	57	57	60	55	43	32
ST-2	Night	1:38 AM	62	76	65	60	57	63	62	57	54	52	54	48	37	26
ST-3	Night	2:07 AM	70	96	68	64	58	59	61	57	53	52	55	49	37	27
ST-4	Night	12:35 AM	71	94	70	67	65	62	62	60	58	59	63	57	46	36

Note: Sound pressure levels are rounded to the nearest whole decibel.

Weather Conditions:

	Date	Temp	RH	Sky	Wind
Daytime	Thursday, September 29, 2016	60 °F	57%	Mostly cloudy	N @ 2-4 mph
Nighttime	Friday, September 30, 2016	58 °F	61%	Partly cloudy	E @ 2-6 mph

Monitoring Equipment Used:

	Manufacturer	Model	S/N
Sound Level Meter	Larson Davis	LD831	1993
Microphone	Larson Davis	377B20	110889
Preamp	Larson Davis	PRM831	015260
Calibrator	Larson Davis	Cal200	7146

Table 4.10-3 Modeled Noise Sources

Noise Source	*Quantity*	*Approximate Location*	*Size/Capacity*
Garage Exhaust Fan (Louvered)	6	Ground Level at entrance on Traveler St.	12,500 CFM
Energy Recovery Unit	2	Roof (150′ tier)	12,000 CFM
Energy Recovery Unit	1	Eighth Floor (74′ 8″ tier)	8,000 CFM
Cooling Tower	1	Roof (150′ tier)	491-ton
Emergency Generator	1	Roof (150′ tier)	600 kW

Table 4.10-4 Modeled Sound Power Levels per Noise Source

Noise Source	*Broadband (dBA)*	*Sound Level (dB) per Octave Band Center Frequency (Hz)*								
		31.5	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Garage Exhaust Fan[1]	91	83[5]	83	92	91	88	86	83	78	69
Energy Recovery Unit[2] (12,000 CFM)	87	81[5]	81	86	90	84	80	78	69	63
Energy Recovery Unit[2] (8,000 CFM)	85	80[5]	80	80	89	82	79	77	70	62
Cooling Tower[3]	97	107[5]	107	101	100	93	91	86	79	72
Emergency Generator – SA Canopy[4]	102	117[5]	117	111	107	98	91	89	86	80

Notes:
Sound power levels do not include mitigation identified in Table 4.10-5.

1. Greenheck QEI-30-55 12,500 CFM fan.
2. Sound levels include supply, exhaust, and casing.
3. Marley NC8405SCN2, 2-cell unit
4. Caterpillar C18 600 kW generator. Sound levels include mechanical sound with an enclosure and exhaust sound through a silencer.
5. No data provided by manufacturer. Octave-band sound level assumed to be equal to dB level in 63 Hz band.

Table 4.10-5 Attenuation Values Applied to Mitigate Each Noise Source

Noise Source	Form of Mitigation	Sound Level (dB) per Octave Band Center Frequency (Hz)								
		31.5	63	125	250	500	1k	2k	4k	8k
Garage Exhaust Fan	Silencer[1]	2	3	6	11	23	24	19	13	9
Garage Exhaust Fans (Ducted Outlet)	Louver[2]	0	6	12	15	21	24	27	25	20
Cooling Tower	Alternative/Modified Unit[3]	0	1	2	3	4	4	6	6	5
Energy Recovery Units (12,000 CFM)	Alternative/Modified Unit[3]	0	0	0	0	2	4	6	4	2

Notes:

1. Assumed Vibro Acoustics RD-HV-F5 5-ft Rectangular Dissipative High Velocity Silencer
2. Assumed IAC Noishield™ Model 2R Acoustic Louver
3. The Proponent will consult with the manufacturer to identify mitigation options to achieve at least the attenuation values presented or select a unit from an alternate manufacturer meeting the mitigated modeled sound levels.

4.10.5.2 Noise Modeling Methodology

The noise impacts associated with the Project were predicted at the nearest receptors using the Cadna/A noise calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation (Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation). The benefits of this software are a more refined set of computations due to the inclusion of topography, ground attenuation, multiple building reflections, drop-off with distance, and atmospheric absorption. The Cadna/A software allows for octave band calculation of noise from multiple noise sources, as well as computation of diffraction around building edges.

4.10.5.3 Future Sound Levels – Nighttime

The analysis of sound levels at night considered all of the mechanical equipment without the emergency generator running, to simulate typical nighttime operating conditions at nearby receptors. Ten modeling locations were included in the analysis. Locations A through D are identical to measurement Locations 1 through 4. Six additional modeling locations, E through J, were added for additional residential uses in the vicinity of the Project. The modeling receptors, which correspond to the residential and commercial uses in the community are depicted in Figure 4.10-2. The predicted exterior Project-only sound levels range from 26 to 46 dBA at nearby receptors. The City of Boston Residential limits have been applied to each of these locations. Predicted sound levels from Project-related equipment are within the broadband and octave-band nighttime limits under the City Noise Standards at the modeling locations. The evaluation is presented in Table 4.10-6.

Table 4.10-6 Comparison of Future Predicted Project-Only Nighttime Sound Levels to the City of Boston Limits

Modeling Location ID	*Zoning / Land Use*	*Broadband (dBA)*	*Sound Level (dB) per Octave Band Center Frequency (Hz)*								
			31.5	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
A	Residential	35	44	41	37	41	32	26	21	11	0
B	Residential	32	44	39	33	37	28	22	18	10	0
C	Residential	26	49	45	35	31	20	15	10	2	0
D	Residential	38	50	48	42	42	35	31	28	17	0
E	Residential	46	60	59	54	50	41	39	31	22	15
F	Business	44	65	58	57	49	31	26	22	22	22
G	Residential	45	48	45	42	50	42	38	32	22	7
H	Residential	45	58	57	51	50	41	39	31	21	5
I	Residential	46	57	57	52	50	42	39	32	21	4
J	Residential	46	59	57	51	52	43	38	33	24	12
City of Boston Limits	**Residential**	**50**	**68**	**67**	**61**	**52**	**46**	**40**	**33**	**28**	**26**
	Business	**65**	**79**	**78**	**73**	**68**	**62**	**56**	**51**	**47**	**44**

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

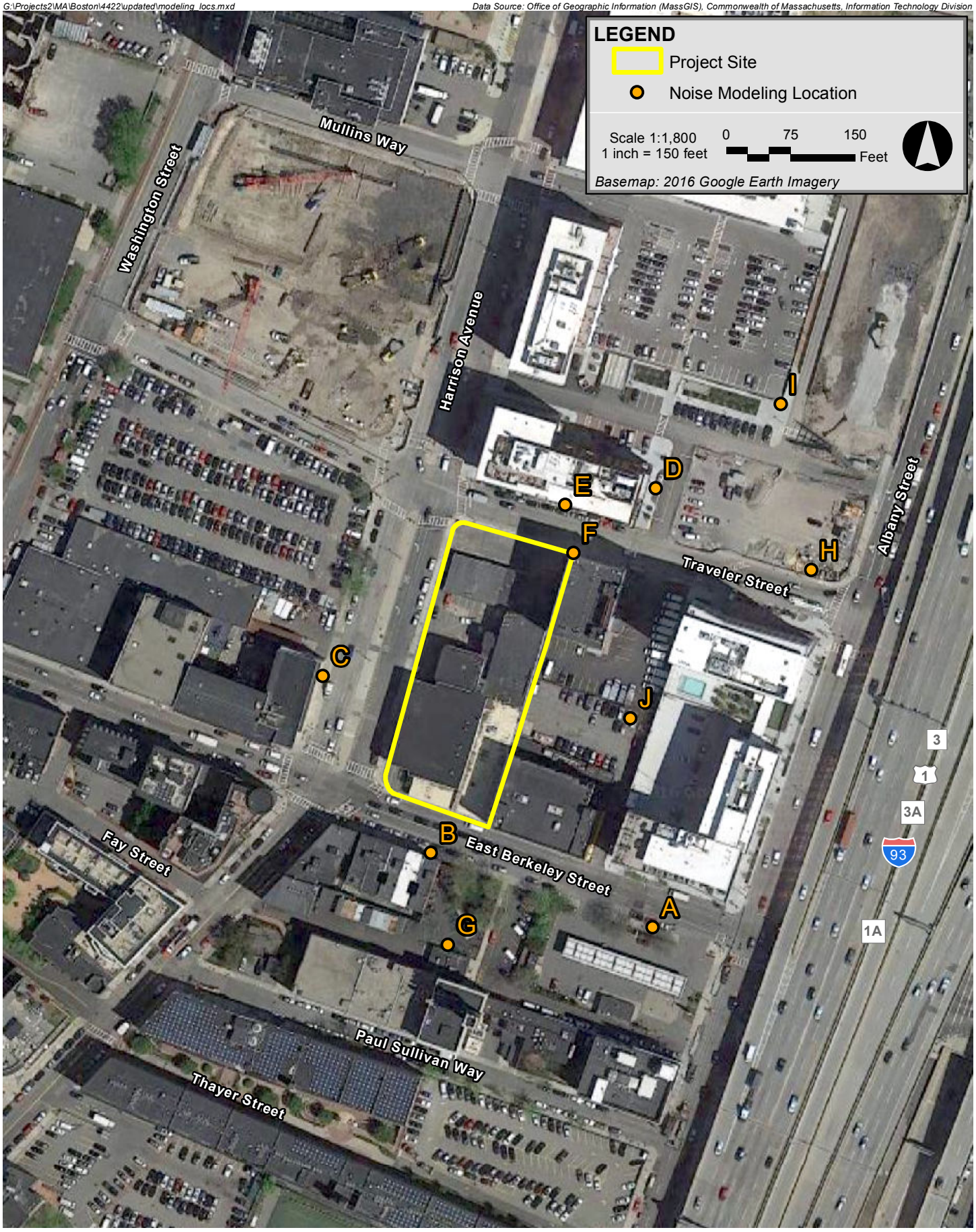

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Figure 4.10-2

Noise Modeling Locations

4.10.5.4 Future Sound Levels – Daytime

As noted above, the emergency generator will only operate during the day for brief, routine testing when the background sound levels are high, or during an interruption of power from the electrical grid. A second analysis combined noise from the Project's mechanical equipment and its emergency generator to reflect worst-case conditions. The sound levels were calculated at the same receptors as in the nighttime analysis, and then were evaluated against daytime limits. The predicted exterior Project-only daytime sound levels range from 35 to 49 dBA at nearby receptors. Predicted sound levels from Project-related equipment are within the daytime broadband and octave-band limits under the City Noise Standards at each of the modeling locations. This evaluation is presented in Table 4.10-7.

Table 4.10-7 Comparison of Future Predicted Project-Only Daytime Sound Levels to City Noise Standards

Modeling Location ID	*Zoning / Land Use*	*Broadband (dBA)*	*Sound Level (dB) per Octave Band Center Frequency (Hz)*								
			31.5	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
A	Residential	36	51	48	40	41	32	26	21	11	0
B	Residential	35	56	51	43	40	31	25	21	15	1
C	Residential	49	67	67	60	54	43	35	30	23	8
D	Residential	39	56	53	46	43	35	31	28	18	0
E	Residential	47	65	63	57	51	42	39	31	23	15
F	Business	45	67	62	58	50	34	29	25	24	22
G	Residential	45	56	53	45	51	42	38	32	22	7
H	Residential	46	61	60	54	51	42	39	31	21	5
I	Residential	47	61	60	54	51	43	40	32	22	4
J	Residential	47	62	60	53	52	43	39	33	24	12
City of Boston Limits	**Residential**	**60**	**76**	**75**	**69**	**62**	**56**	**50**	**45**	**40**	**38**
	Business	**65**	**79**	**78**	**73**	**68**	**62**	**56**	**51**	**47**	**44**

4.10.6 Conclusions

Baseline noise levels were measured in the vicinity of the Project during the day and at night. At these and additional locations, future Project-only sound levels were calculated based on information provided by the manufacturers of the expected mechanical equipment. Project-only sound levels were compared to applicable limits.

Predicted mechanical equipment noise levels from the proposed Project at each receptor location, taking into account attenuation due to distance, structures, and noise-control measures, will be at or below the octave-band requirements of City Noise Standards. The predicted sound levels from Project-related equipment, as modeled, are expected to remain

below 50 dBA at residences; therefore, within the nighttime residential zoning limits for the City of Boston at the nearest residential receptors. The results indicate that the Project can operate without significant impact on the existing acoustical environment.

At this time, while the mechanical equipment and noise controls have been refined, they are still conceptual in nature. During the final design phase of the Project, mechanical equipment and noise controls will be specified and designed to meet the applicable broadband limit and the corresponding octave-band limits of the City Noise Standards.

4.11 Construction Impacts

4.11.1 Introduction

A Construction Management Plan (CMP) in compliance with the City's Construction Management Program will be submitted to the BTD once final plans are developed and the construction schedule is fixed. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Proper pre-planning with the City and neighborhood will be essential to the successful construction of the Project. Construction methodologies, which ensure public safety and protect nearby residences and businesses, will be employed. Techniques such as barricades, walkways and signage will be used. The CMP will include routing plans for trucking and deliveries, plans for the protection of existing utilities, and control of noise and dust.

During the construction phase of the Project, the Proponent will provide the name, telephone number and address of a contact person to communicate with on issues related to the construction. The construction contact will be a person responsible for responding to the questions/comments/complaints of the residents and businesses in the neighborhood.

The Proponent intends to follow the guidelines of the City of Boston and the MassDEP, which direct the evaluation and mitigation of construction impacts.

4.11.2 Construction Methodology/Public Safety

Construction methodologies that ensure public safety and protect the immediately surrounding area will be employed. Techniques such as barricades and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.

As the design of the Project progresses, the Proponent will meet with BTD to discuss the specific location of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. Secure fencing, signage, and covered walkways may be employed to ensure the safety and efficiency of all pedestrian and vehicular traffic flows. In addition, sidewalk

areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered pedestrian walkways when appropriate. If required by BTD and the Boston Police Department, police details will be provided to facilitate traffic flow. These measures will be incorporated into the CMP which will be submitted to BTD for approval prior to the commencement of construction work.

4.11.3 Construction Schedule

Construction of the Project is estimated to commence during the second quarter of 2017 with completion by the second quarter of 2019.

Typical construction hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 3:30 p.m. No substantial sound-generating activity will occur before 7:00 a.m. If longer hours, additional shifts, or Saturday work is required, the construction manager will place a work permit request to the Boston Air Pollution Control Commission and BTD in advance. It is noted that some activities such as finishing activities could run beyond 6:00 p.m. to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete cannot be interrupted.

4.11.4 Construction Staging/Access

Access to the site and construction staging areas will be provided in the CMP.

Although specific construction and staging details have not been finalized, the Proponent and its construction manager will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the site. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.

4.11.5 Construction Mitigation

The Proponent will follow City and MassDEP guidelines which will direct the evaluation and mitigation of construction impacts. As part of this process, the Proponent and construction team will evaluate the Commonwealth's Clean Air Construction Initiative.

A CMP will be submitted to BTD for review and approval prior to issuance of a Building Permit. The CMP will include detailed information on specific construction mitigation measures and construction methodologies to minimize impacts to abutters and the local community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

"Don't Dump - Drains to Boston Harbor" plaques will be installed at storm drains that are replaced or installed as part of the Project.

4.11.6 Construction Employment and Worker Transportation

The number of workers required during the construction period will vary. It is anticipated that approximately 400 construction jobs will be created over the length of construction. The developer of each Project component will make reasonable good-faith efforts to have at least 50% of the total employee work hours be for Boston residents, at least 25% of total employee work hours be for minorities and at least 10% of the total employee work hours be for women. The developer of each Project component will enter into jobs agreements with the City of Boston.

To reduce vehicle trips to and from the construction site, minimal construction worker parking will be available at the site and all workers will be strongly encouraged to use public transportation and ridesharing options. The general contractors will work aggressively to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the site each day.

4.11.7 Construction Truck Routes and Deliveries

Truck traffic will vary throughout the construction period, depending on the activity. The construction team will manage deliveries to the site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. Construction truck routes to and from the site for contractor personnel, supplies, materials, and removal of excavations required for the development will be coordinated with BTD. Traffic logistics and routing will be planned to minimize community impacts. Truck access during construction will be determined by the BTD as part of the CMP. These routes will be mandated as a part of all subcontractors' contracts for the development. The construction team will provide subcontractors and vendors with Construction Vehicle & Delivery Truck Route Brochures in advance of construction activity.

"No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

4.11.8 Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during demolition, excavation and construction include mechanical street sweeping, wetting portions of the site during periods of high wind, and careful removal of debris by covered trucks. The construction contract will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts, pursuant to this Article 80 approval. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;
- Minimizing spoils on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site; and
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

4.11.9 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

- Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

4.11.10 Construction Vibration

All means and methods for performing work at the site will be evaluated for potential vibration impacts on adjoining property, utilities, and adjacent existing structures. Acceptable vibration criteria will be established prior to construction, and vibration will be monitored, if required, during construction to ensure compliance with the agreed-upon standard.

4.11.11 Construction Waste

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

4.11.12 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its Site Plan Review process.

4.12 Rodent Control

A rodent extermination certificate will be filed with each building permit application for the Project. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work, in compliance with the City's requirements.

4.13 Wildlife Habitat

The Project Site is in an established urban neighborhood and is developed. There are no wildlife habitats in or adjacent to the Project Site.

Chapter 5.0

Sustainable Design and Climate Change Preparedness

5.0 SUSTAINABLE DESIGN AND CLIMATE CHANGE PREPAREDNESS

5.1 Introduction

This section describes how the Project will be designed to meet the requirements of Article 37 of the Code by achieving certifiability under the U.S. Green Council's (USGBC) Leadership in Energy and Environmental Design (LEED) 2009 New Construction rating system. Potential site-generated energy technologies are also described, as well as measures to make the Project resilient towards future climate conditions.

5.2 Sustainable Design

This section outlines sustainable strategies currently being considered in the proposed design of the Project.

The Project is anticipated to be certifiable at a Silver level under the U.S. Green Council's (USGBC) Leadership in Energy and Environmental Design (LEED) 2009 New Construction rating system. The Project will incorporate a holistic approach to sustainability that promotes livability and economic development, while mitigating the environmental impacts of energy, water and materials use. Preliminary credit categories are outlined below and shown in the LEED checklist provided at the end of this section. The overall LEED Strategy and target credits will be assessed throughout the design of the Project.

Sustainable Sites

The Project is located in a dense neighborhood with excellent access to public transportation, and commercial and cultural activity. Site sustainability is enhanced with strategies that reduce the urban heat island effect and stormwater runoff: covered vehicle parking, highly-emissive roofs, and stormwater detention and treatment.

Water Efficiency

The Project will save potable water by installing low-flow fixtures, drip-irrigation and drought-tolerant landscaping, as well as conductivity meters and automatic controls for chemical treatment on cooling towers to reduce make-up water demand.

Energy and Atmosphere

The Project design will incorporate a highly efficient mechanical system design to comply with the Stretch Code provisions of the Massachusetts Building Code and LEED goals. A memo describing a preliminary energy model is included in Appendix B.

The Project includes a well-insulated envelope with moderate amounts of glazing to reduce heat loss in the winter and solar load in the summer, enthalpy wheel ventilation energy recovery, high-efficiency hybrid heat pumps, condensing boilers and hot water heaters,

variable speed fans and pumps, electronically commutated motors (ECMs) and efficient lighting.

Harmful refrigerants will not be used and the Project will be commissioned to help ensure major energy-using equipment is installed correctly.

Materials and Resources

Environmental impacts of resource extraction, processing and transportation will be limited by specifying regional and recycled materials. Further impact reductions will be achieved by diverting construction waste from landfill and encouraging recycling at the building.

During operation, the Project will include recycling areas for items such as paper, plastic, glass and cans.

Indoor Environmental Air Quality

The Project will achieve excellent indoor environmental quality by specifying low-volatile organic compound (VOC) materials, installing filtration media and entryway systems and designing spaces for high levels of thermal comfort.

Innovation and Design Process

Among other measures, the Project is considering Innovation Credits for Green Education, Resiliency Planning, Cooling Tower Water Management, Low-Mercury Lighting Fixtures and Exemplary Performance in LEED credits.

The Project team includes at least one LEED Accredited Professional.

5.3 Site-generated Energy

The Proponent has studied a number of different site-generated energy options for the Project. The technologies studied and potential feasibility of each is provided below.

Photovoltaics

Photovoltaic (PV) panels provide electricity and can help reduce the operating cost of a building. Given the volume of the building, the total energy demand is high and the roof space available for PV is limited to approximately 11,000 sf adjacent to and on top of the mechanical penthouse (bulkhead). This area is sufficient for an approximately 140 kW PV array which can generate roughly 155,000 kWh per year, representing roughly 3% of the total energy cost and can qualify for 2 LEED energy points. The feasibility of a PV system will depend on the cost and incentives at the time of construction, and will be evaluated closer to the start of construction.

Wind

The feasibility of generating electricity from wind sources was assessed and rejected for the following reasons:

- Competing roof area for mechanical equipment and amenities; and
- Small, vertical wind turbines provide limited electricity generation relative to total building demand.

Transpired Solar Collectors

The feasibility of using solar energy to preheat ventilation air was assessed and rejected for the following reasons:

- Transpired solar collectors are ideal for large opaque south-facing walls. Residential projects have too much glazing and not enough continuous opaque wall area to make this technology viable; and
- The Project includes energy recovery wheels to preheat all outside air entering the building. The energy recovery wheels recover heat from building return air that would otherwise be exhausted. The additional benefit of transpired solar collectors is limited.

Solar Thermal

The feasibility of generating thermal energy from solar thermal was assessed and rejected for the following reasons:

- Competing roof area for mechanical equipment, vegetated roofs and amenities; and
- Relatively low cost of natural gas compared to electricity which reduces the cost-effectiveness of solar thermal.

Geothermal (Ground Source Heat Pumps)

The feasibility of using geothermal sources to provide heating and cooling was assessed and rejected for the following reasons:

- Relatively low cost of natural gas and relatively high cost of electricity makes geothermal less cost-effective compared with energy conservation strategies.

Combined Heat and Power

Combined heat and power (CHP) systems, also known as cogeneration, generate electricity and useful thermal energy in a single, integrated system. CHP systems are most

advantageous for facilities such as this one that have a hot water demand year-round. Therefore, a smaller sized 25-50 kW CHP system to power the base hot water load of the building is currently being considered. This CHP system would operate via natural gas to produce hot water and electricity, and would primarily provide domestic hot water. Since CHP produces electricity using less expensive natural gas, but generates usable heat less efficiently than a conventional natural gas boiler, the net impact would be a slight increase of 1% to 2% in energy use, and a slight decrease of 1% to 2% in energy costs and carbon emissions. Additional analysis will be done in later stages of design to further evaluate the energy and financial implications of a CHP system.

With involvement and input from Eversource, including their approval to connect back into the grid, such a system could be further evaluated.

5.4 Climate Change Resilience

5.4.1 Introduction

Climate change conditions considered by the Project team include higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts, more severe freezing rain and heavy rainfall events and associated flooding, and increased wind gusts.

The expected life of the Project is anticipated to be approximately 50 years. Therefore, the Proponent planned for climate-related conditions projected 50 years into the future. A copy of the completed Checklist is included in Appendix C. Given the preliminary level of design, the responses are also preliminary and may be updated as the Project design progresses.

5.4.2 Extreme Heat Events

The Intergovernmental Panel on Climate Change (IPCC) has predicted that in Massachusetts the number of days with temperatures greater than 90°F will increase from the current five-to-twenty days annually, to thirty-to-sixty days annually.[1] The Project design will include measures to adapt to these conditions, including planting street trees, constructing a high performance building envelope and including operable windows where possible.

[1] IPCC (Intergovernmental Panel on Climate Change), 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Avery, M. Tignor, and H. L. Miller (eds.)]. Cambridge University Press, Cambridge, UK, and New York, 996 pp.

5.4.3 Rain Events

As a result of climate change, the Northeast is expected to experience more frequent and intense storms. To mitigate this, the Proponent will take measures to minimize stormwater runoff and protect the Project's mechanical equipment, as necessary. The Project will be designed to reduce the existing peak rates and volumes of stormwater runoff from the site, and promote runoff recharge to the greatest extent practicable. The Project will increase the pervious area on the site from the existing condition, creating infiltration ability on the site.

5.4.4 Drought Conditions

Although more intense rain storms are predicted, extended periods of drought are also predicted due to climate change. Under the high emissions scenario, the occurrence of droughts lasting one to three months could go up by as much as 75% over existing conditions by the end of the century. To minimize the Project's susceptibility to drought conditions, the landscape design is anticipated to incorporate native and adaptive plant materials and high efficiency irrigation systems will be installed. Aeration fixtures and appliances will be chosen for water conservation qualities, conserving potable water supplies.

LEED 2009 for New Construction and Major Renovations

Project Checklist

370-380 Harrison Ave

Sustainable Sites — Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
		1	Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y			Prereq 1	Water Use Reduction—20% Reduction	
2	2		Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
2	1	1	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
6	3	10	Credit 1	Optimize Energy Performance	1 to 19
	2	5	Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
	3		Credit 5	Measurement and Verification	3
	2		Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
2			Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
	1		Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
		1	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
		1	Credit 7.2	Thermal Comfort—Verification	1
	1		Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

1			Credit 1.1	Innovation in Design:	1
1			Credit 1.2	Innovation in Design:	1
1			Credit 1.3	Innovation in Design:	1
1			Credit 1.4	Innovation in Design:	1
	1		Credit 1.5	Innovation in Design:	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Regional Priority: SSc6.1	1
1			Credit 1.2	Regional Priority: SSc7.2	1
	1		Credit 1.3	Regional Priority: Specific Credit	1
		1	Credit 1.4	Regional Priority: Specific Credit	1

58	17	35	**Total**	Possible Points: **110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Chapter 6.0

Urban Design

6.0 URBAN DESIGN

6.1 Building Design

The building design has been pulled from the variety of architecture found within the South End neighborhood. From the industrial influences to the south, to the modern scale and design flourishing immediately to the north and east, the Project will act as a transition while simultaneously complementing the context (Figures 6-1 to 6-4 include elevations). Stylistically, the design will aim to meld the architectural character of the immediate surroundings established by the juxtaposition of new/contemporary and existing/historical buildings. The Project design has been influenced by the broader neighborhood, including the brick manufacturing buildings in the nearby area and the large, contemporary new developments. The massing has been designed to act transitionally among the surrounding areas and to create an aesthetically pleasing skyline.

The form of the building will be made up of a series of masses: the masses abutting the street edge along the north, west, and south perimeters have been designed such that the heights of these masses are directly correlated to their immediate neighboring buildings; the taller portions of the massing will be set back from the property line to preserve the pedestrian scale along the urban edge, and run axially in the north-south direction (see Figures 6-5 and 6-6).

6.2 Streetscape

The design of the landscape and streetscape responds to the City of Boston's Harrison Albany Corridor Strategic Plan. The site is located at the intersection of the Harrison Avenue Creative Use Corridor and the Traveler Street Green Corridor, and is also situated at a point where the street grid shifts orientation along East Berkeley Street. The character and dimensionality of the public realm will be designed to enhance the pedestrian experience around the site, and will respond to the site's specific orientation within its section of the Harrison Albany Corridor Strategic Plan: a generous planted pedestrian streetscape is proposed for Traveler Street, consistent with the Harrison Albany Corridor Strategic Plan, identifying Traveler Street as a Primary Green Corridor; the enlarged public domain along Harrison Avenue (the Creative-Use Corridor) will have a variety of widths, providing various forms and typologies of space; on East Berkeley Street, the sidewalk will be sized to respect the residential/pedestrian scale already found in the neighboring parcels to the south.

The predominant public experience will be located along Harrison Avenue. The walkway along the length of Harrison Avenue is envisioned as a linear, tree-lined plaza, creating both directionality and shared common spaces. The primary urban walkway will exist along rows of trees, providing ample shade and definition for everyday users; outdoor seating and other activities will populate either side flanking the allée of trees. This spatial

arrangement of walkway and landscape will allow for multiple potential uses that can provide public and commercial amenities to the neighborhood.

Programmatic uses at street level, including retail, residential lobbies/entries, and other amenity spaces, will further aid in the enhancement of the pedestrian experience along the site's street frontage in such a manner that reflects the planning for the South End's "New York Streets" district. The Project is designed to create a more dynamic area, augmenting the pedestrian experience while establishing meaningful links within and around the site, including adjacent neighborhood parcels and redevelopment projects. Consistent with this design and with the Harrison Albany Corridor Strategic Plan, the intersection of Harrison Avenue and Traveler Street has been highlighted as a destination-node. Both the design of the landscape and the building respond to this unique place-making endeavor with the incorporation of a transparent/glass retail storefront.

6.3 Courtyard Passageway

As described in Section 2.2, the Courtyard Passageway will traverse the ground plane in order to link a west-facing courtyard along Harrison Avenue with the Mid-block Connector along the easternmost portion of the site, as described in detail in Section 6.4. The Courtyard Passageway will connect to the green walkway along Harrison Avenue via a courtyard that will act as a public extension of the sidewalk. The Courtyard Passageway will be accentuated by planting and unique paving designs, and will allow for retail, residential entries, and other activities to open out directly to the public.

6.4 Mid-block Connector

The Project proposes the Mid-block Connector in addition to the Courtyard Passageway, a multi-purpose area connecting Traveler Street to East Berkeley Street on the eastern edge of the site, intended to encourage pedestrian circulation throughout the entirety of the Project Site. The Mid-block Connector will prioritize all modes of transportation (e.g., personal vehicles, bicycles, walking) by minimizing curb elevations, and will provide vehicular access to the building's parking garage below grade, and access to drop-off zones for the residential lobbies. Portions of the Mid-block Connector will be open to the sky and filled with landscaped elements to enrich the space and improve the pedestrian experience. Pedestrian-scale lighting and planting will line the new drive, further defining the character of the shared corridor; this careful selection of materials will allow the Mid-block Connector to maximize functionality for both transportation and pedestrian users, while creating open space that adapts to the needs residents. The Mid-block Connector, in conjunction with the dynamic Courtyard Passageway, will have the potential to become a valuable neighborhood asset through the cohesive design of programmed and open, landscaped spaces.

6.5 Harrison Avenue Improvements

Proposed improvements to the adjacent segment of Harrison Avenue include improved lane designations and intersection functionality, in addition to improved curb-side parking, lighting and other streetscape improvements. The Proponent envisions a significantly improved transition from the two-lane Harrison Avenue layout south of the Project Site, to the divided four-lane layout directly in front of the Project Site once the Project has been completed.

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-1
West Elevation

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-2
North Elevation

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-3
South Elevation

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-4
East Elevation

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-5
View Looking North From Harrison Avenue

370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile ground

Figure 6-6
View Looking East From Traveler Street

Chapter 7.0

Historic and Archaeological Resources

7.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

7.1 Introduction

The following section identifies historic and archaeological resources in the vicinity of the Project Site and discusses potential Project-related impacts.

7.2 Historic Resources on the Project Site and in the Vicinity

As discussed in the PNF, there are no resources listed in the State or National Registers of Historic Places on the Project Site. The two existing buildings on the Project Site are 20th century structures that have been heavily altered and are in poor condition.

The Project Site is located within the South End Industrial Survey Area, a grouping of late nineteenth- to early twentieth-century brick industrial buildings with related tenement and worker housing. The South End Industrial Survey Area is included in the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth. The area was surveyed by the Boston Landmarks Commission in 1997; however, the existing buildings on the Project Site are not identified as contributing resources to the area.

The Project Site is also located within the South End Landmark District (SELD) Protection Area; however, it is not located within the designated landmark boundaries. Nor is the Project Site within the boundaries of the National Register-listed South End Historic District.

The design, scale, and massing of the existing buildings are not consistent with the institutional, commercial and residential buildings within the nearby SELD and the National Register-listed South End Historic District. The existing buildings lack architectural significance and do not have an important association with one or more persons, events or broad architectural, cultural, political, economic or social patterns of history in the City.

Historic resources in the vicinity of the Project Site are identified in Table 7-1.

Table 7-1 Historic Resources in the Vicinity of the Project Site

Map	*State & National Register-listed Properties & Historic Districts*	*Address*	*Designation*
1	South End National Register Historic District	Roughly bound by Yarmouth Street, Columbus Avenue, Mass. Turnpike, Berkeley Street, Tremont Street, Dwight Street	National Register Historic District
2	South End Landmark District	Roughly bound by Claremont Street, Camden Street, Harrison Avenue, East Berkeley Street, Mass. Turnpike	Local Historic District, State Register of Historic Places
3	South End Landmark District Protection Area	Roughly bound by Mass. Turnpike, Rt. 93, Washington Street, Malden Street, Harrison Avenue, Albany Street, Camden Street	Protection Area

7.3 Archaeological Resources on the Project Site

The Project Site consists of previously developed urban parcels. No previously identified archaeological resources are located within the Project Site. Due to previous development activities and disturbances, including site grading activities and infrastructure construction, it is not anticipated that the site contains significant previously unidentified archaeological resources. No impacts to archaeological resources are anticipated as a result of the Project.

7.4 Status of Project Review with Historical Agencies

7.4.1 Massachusetts Historical Commission

The Project is anticipated to be subject to State Register Review (950 CMR 71.00 et. seq) as a result of the possible use of state funding. The Proponent will submit a copy of the Environmental Notification Form filed with the Executive Office of Energy and Environmental Affairs to the MHC to initiate the State Register Review process. If MEPA review is not required and a state action is required, an MHC Project Notification Form will be submitted to the MHC.

7.4.2 South End Landmark District Commission Review

The Project Site is located within the SELD Protection Area. Building demolitions, the height and setback of new construction, and changes to topography and landscaping within the Protection Area are subject to review by the SELD Commission. The Proponent will file a Design Review application for the Project with the SELD Commission.

7.5 Potential Project Related Impacts

The modified buildings are in very poor condition and their removal from the site would not affect the historical and architectural significance of the nearby SELD or the National Register-listed South End Historic District. The Project will have no direct or indirect impacts to historic resources, as described below. Wind and shadow impacts were considered and are discussed in detail in Sections 4.1 and 4.2, respectively.

7.5.1 Wind Impacts

The Proponent conducted a qualitative pedestrian wind study in accordance with the Scoping Determination issued by the BPDA. The methodology and results of the wind analysis are presented in Section 4.1. Based on the local wind data, the Project height, and information on surrounding area, the analysis determined that limited uncomfortable conditions will be adjacent to the site along Harrison Avenue and Traveler Street. The Proponent will study possible measures to mitigate these conditions, as necessary. The Project is not anticipated to impact wind conditions in the National Register-listed South End Historic District or SELD.

G:\Projects2\MA\Boston\4422\historic.mxd

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

370-380 Harrison Avenue **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 7-1
Historic Resources

7.5.2 Shadow Impacts

A shadow impact analysis was conducted in accordance with the Scoping Determination issued by the BPDA. The methodology and results are described in detail in Section 4.2, and results are depicted in Figures 4.2-1 through 4.2-14. Shadows resulting from the Project will generally be limited to the immediately surrounding streets and sidewalks, and no new shadow will be cast onto public open spaces. Existing shadow largely define impacts in the vicinity of the Project Site and new shadow from the Project is incremental and minor within the public realm. The results of the shadow study indicate that the Project will have no adverse impact on historic resources.

7.5.3 Archeological Resources

As described above, due to previous development activities and disturbances, including site grading activities and infrastructure construction, no impacts to archaeological resources are anticipated as a result of the Project.

7.5.4 Urban Design and Visual Impacts

The Project is in keeping with the architectural character of the surrounding neighborhood and the Project will not impact the historic resources in the vicinity of the Project Site. A detailed description of the existing urban fabric and proposed design is provided in Chapter 6.

The Project's design recognizes and respects the scale and character of the existing neighborhood. The building design is inspired by the variety of architecture found within the South End neighborhood; from the industrial influences to the south, to the modern scale and design flourishing immediately to the north and east. The Project will act as a transition between the existing neighborhood and newer development located to the north of the Project Site.

Chapter 8.0

Infrastructure

8.0 INFRASTUCTURE COMPONENT

8.1 Introduction

The Project will connect to existing municipal systems in the adjacent public streets of Traveler Street, Harrison Avenue and East Berkeley Street. This chapter evaluates the infrastructure systems that will support the Project. Based on initial investigations and consultations with the appropriate agencies and utility companies, existing infrastructure systems are adequately sized to accept the incremental increase in demand associated with the development and operation of the Project. The following utilities were reviewed: wastewater, water, drainage, natural gas, electricity, and telecommunications. In addition, consideration was given to sustainable elements of the energy supply provision for the Project.

The final design process for the Project will include required engineering analyses and will adhere to applicable protocols and design standards, ensuring that the proposed building is properly supported by the City's infrastructure. Detailed design of the Project's utility systems will proceed in conjunction with the design development of the buildings and interior mechanical systems.

The systems discussed below include those owned and managed by the Boston Water and Sewer Commission (BWSC), private utility companies, and on-site infrastructure systems. There will be close coordination among these entities and the Project engineers and architects during subsequent reviews, and the design development process.

All improvements and connections to the BWSC infrastructure will be reviewed by the BWSC as part of its Site Plan Review process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity, and establishment of water and sewer service accounts.

8.2 Regulatory Framework

This chapter, in addition to a description of existing and future infrastructure connections, discusses the regulatory framework of utility connection reviews and standards. All connections will be designed and constructed in accordance with city, state and federal standards.

- In the City of Boston, the BWSC is responsible for the majority of water, sewer and storm water drainage systems.
- The Boston Fire Department will review the Project with respect to fire protection measures such as siamese connections and standpipes.

- Design of site access hydrant connections and energy systems (gas and electric) will also be coordinated with the respective system owners, such as BWSC, National Grid and Eversource.

- The Boston Public Works Department will authorize new utility connections through the street opening permit process, as required.

- Additional information on the regulatory framework for each utility system is included in subsequent sections of this chapter.

A more complete list of the state and local permits anticipated in connection with the Project infrastructure is included above in Section 2.4.

8.3 Wastewater

8.3.1 Existing Wastewater

Local sanitary sewer service in the City of Boston is provided by the BWSC. The Project Site will be serviced by the existing 12-inch sanitary sewer in Harrison Avenue, which discharges to the 36-inch sanitary sewer in East Berkeley Street. Figure 8-1 at the end of this chapter shows the existing wastewater infrastructure.

8.3.2 Demand Use

The Project consists of approximately 356,500 sf of building space as listed below. A total sewer generation of 59,250 gallons per day (gpd) is expected for the proposed building program. Generation rates are based on wastewater flow design criteria included in the MassDEP 310 CMR 15.203: *The State Environmental Code (Title 5).* The Project is also expected to generate demand for "blow down" from cooling systems operations, which is included in the total wastewater generation as shown in Table 8-1.

Table 8-1 Projected Wastewater Flows

Use	*Program*	*Generation Rate*	*Gallons per Day*
Studio	72	110 gpd / unit	7,920
1 Bedroom	140	110 gpd / unit	15,400
1.5 Bedroom	22	165 gpd / unit	3,630
2 Bedroom	60	220 gpd / unit	13,200
2.5 Bedroom	15	275 gpd / unit	4,125
3 Bedroom	3	330 gpd / unit	990
3.5 Bedroom	12	385 gpd / unit	4,620
Lobby/BOH	14,133-sf	75 gpd / 1,000 sf	1,060

Table 8-1 Projected Wastewater Flows (Continued)

Use	*Program*	*Generation Rate*	*Gallons per Day*
Amenities	17,377-sf	75 gpd / 1,000 sf	1,303
Restaurant	200 seats	35 gpd / seat	7,000
		TOTAL (calculated)	*59,248*
		TOTAL (rounded up)	**59,250**

1 To be conservative, it has been assumed that the entire commercial/retail space will be occupied by restaurants. Other retail uses that could occupy the space will likely generate less wastewater.

8.3.3 Proposed Connection

The sewer connection will be made on the BWSC 12-inch sanitary sewer at the front of the building, under the existing sidewalk in Harrison Avenue, by means of three 10-inch cast iron sewer lateral connections.

The Proponent will coordinate with the BWSC and the necessary agencies on the design and capacity for proposed connections to the sewer system. In addition, the Proponent will submit a General Service Application and Site Plan, for review as the Project progresses.

8.4 Domestic Water and Fire Protection

8.4.1 Existing Water Supply System

Water for domestic and fire supply purposes will be obtained from the BWSC. There are two different water systems serving the Project area. The southern low service system with a typical pressure range of 50 to 60 psi is located in Traveler Street, Harrison Avenue and East Berkeley Street. The southern low service line in Traveler Street has been taken out of service. The southern high service system with a pressure range of 90 to 100 psi is also located in Traveler Street, Harrison Avenue and East Berkeley Street. Figure 8-2 at the end of this chapter shows the existing water infrastructure.

8.4.2 Demand / Use

Domestic water demand is based on estimated wastewater generation with an added factor of ten percent for consumption, system losses and other uses. Based upon the wastewater generation rates outlined in the MassDEP Sewer Connection and Extension Regulations, 310 CMR 15.203, the Project will require approximately 65,175 gpd for domestic water supply purposes.

8.4.3 Proposed Connections

The Project plans to connect two fire supply mains and two domestic services to two different BWSC water distribution mains for redundancy purposes. The BWSC water mains

where these connections will be made are the 8-inch high service in Traveler Street and the 12-inch high service in Harrison Avenue.

Compliance with the standards for the water main connections for domestic and fire supply purposes will be reviewed as part of BWSC's Site Plan Review process. This review will include, but is not limited to, sizing of the domestic and fire supply protection services, calculation of meter sizing, backflow prevention design, and locations of hydrants and siamese connections conforming with the BWSC and Boston Fire Department requirements.

8.5 Stormwater Management

Since the majority of the Project is currently impervious to rainfall percolation, construction of the Project will not produce significant changes in either the pattern of, or increase the rate of, stormwater runoff. Stormwater management controls will be established in compliance with BWSC standards, and the Project will not result in the introduction of any peak flows, pollutants or sediments that would potentially impact the local BWSC stormwater drainage system.

8.5.1 Existing Conditions

The Project Site was formerly used by two food service industry companies, the Quinzani Bakery and the Ho Kong Bean Sprout Company. Parking area runoff and roof drainage from the vacant buildings currently discharge into the BWSC combined sewer systems in Traveler Street, Harrison Avenue and East Berkeley Street.

Stormwater runoff from the site is conveyed into the BWSC 44-inch x 54-inch combined sewer in East Berkeley Street. Combined sewer overflows from this conduit ultimately discharge into the Fort Point Channel through a BWSC 48-inch outfall pipe, near the West Fourth Street Bridge. The 48-inch outfall pipe is equipped with a flexible tide gate assembly to prevent tidal surges from backing up into the BWSC drainage system. The Massachusetts Department of Transportation also has one 36-inch storm drain and one 72-inch storm drain discharging to Fort Point Channel in the same general area.

The existing conditions survey conducted by the Project team identified several drain manholes, catch basins and dry wells on site. All existing drainage structures will be abandoned and discontinued, and the associated drainage piping will be cut and capped.

8.5.2 Proposed Conditions

The quantity of stormwater from the site will not change from the existing condition to the full build-out condition because the entire site will continue to be close to 100 percent impervious.

Stormwater runoff from the Project Site will be collected through a series of groundwater recharge chambers surrounding the proposed building, which will allow groundwater

recharge on site. The groundwater recharge system will consist of a series of precast concrete galley chambers, with perforated side and end walls which will allow the stormwater from the roof and the site to discharge into the groundwater. This system will be provided with an overflow pipe connection to the existing 44-inch x 54-inch combined sewer in East Berkeley Street described above. Based on initial investigations, this drainage system is adequately sized to continue acceptance of the stormwater runoff from the Project Site.

Runoff from the roof will be directed to the groundwater system through five 10-inch cast iron downspout connections. Runoff from the driveways, Mid-block Connector, and the garage ramps will enter the ground level stormwater drainage systems through a series of deep sump catch basins to remove grit and sand. The stormwater from the catch basins will be conveyed to water quality control structures (particle separators) for additional removal of total suspended solids and free petroleum-based hydrocarbons before discharge into the groundwater recharge system.

The Project team has initiated discussions with both the BWSC and the Boston Groundwater Trust related to the design criteria and construction requirements for the groundwater recharge system.

The precast concrete galley chamber sections must be located on the private property portion of the Project, and none of them can be located under the new public sidewalks adjacent to the proposed building.

The BWSC will review and evaluate the impacts of stormwater connections to its system under its Site Plan Review process. Stormwater management controls will be established in compliance with BWSC standards; the Project will not introduce any increased peak flows, pollutants or sediments that would potentially impact the Boston Harbor. The Proponent will submit a Stormwater Management Program to the BWSC. The estimated existing runoff and future stormwater flows for the site are summarized below in Table 8-2. The existing and projected Project area of 44,570-sf (1.02 acres) and 100 percent impervious areas are used in both cases. The Project will also demonstrate compliance with GCOD requirements as noted in Section 4.8.2, above.

Table 8-2 Storm Water Runoff

	2-year Storm	10-year Storm	24-year Storm	100-year Storm
Estimated Existing Runoff (cfs)*	4.9	7.3	9.2	14.3
Projected Future Runoff (cfs)	4.9	7.3	9.2	14.3

* cfs = cubic feet per second

8.5.3 Compliance with MassDEP Stormwater Management Policy

The Project will comply with the requirements of the MassDEP Stormwater Management Policy as follows:

Standard No. 1: Untreated Stormwater

Compliance: The Project will provide treatment of runoff from service roads and entrance-ways by means of catch basins.

Standard No. 2: Post-Development Peak Discharge Rates

Compliance: The impervious characteristic of the post-development site will be the same as the historical pre-existing conditions. The post-development runoff rate will not exceed the pre-development rate to Boston Harbor.

Standard No. 3: Recharge to Groundwater

Compliance: The Project is required to provide a groundwater recharge system.

Standard No. 4: 80 Percent Total Suspended Solids Removal

Compliance: Stormwater runoff will be directed to catch basins and water quality control structures prior to discharge into the BWSC storm drainage system.

Standard No. 5: Higher Potential Pollutant Loads

Compliance: The Project Site does not contain land uses with higher potential pollutant loads.

Standard No. 6: Protection of Critical Areas

Compliance: The Project Site does not contain critical areas.

Standard No. 7: Redevelopment Projects

Compliance: The Project will meet or exceed these standards.

Standard No. 8: Erosion / Sediment Controls

Compliance: Construction contracts will include requirements for erosion and sediment controls, including silt fences, straw bales, and catch basin filter sacks. Construction dewatering discharges will comply with National Pollutant Discharge Elimination System (NPDES) and City of Boston dewatering standards. The Project team will prepare a Storm Water Pollution Protection Plan (SWPPP).

Standard No. 9: Operation / Maintenance Plan

Compliance: The Project team will prepare an Operation and Maintenance Program for both the construction and post-development phases of the Project to minimize movement of sediment and pollutants off-site. Typical requirements during the Construction Phase will include removal of excess soils from the site, routine street sweeping, catch basin cleaning and cleaning of catch basin filter sacks. A truck and trailer wheel wash station will be established during construction at the work zone exit area to minimize transport of construction materials off site.

Standard No. 10: Illicit Connections

Compliance: The Project will comply with this Standard. There will be no illicit connections associated with the Project.

8.6 Anticipated Needs

The Project will connect to existing public and private utilities in Traveler Street, Harrison Avenue and East Berkeley Street. The Project will require the following utility connections:

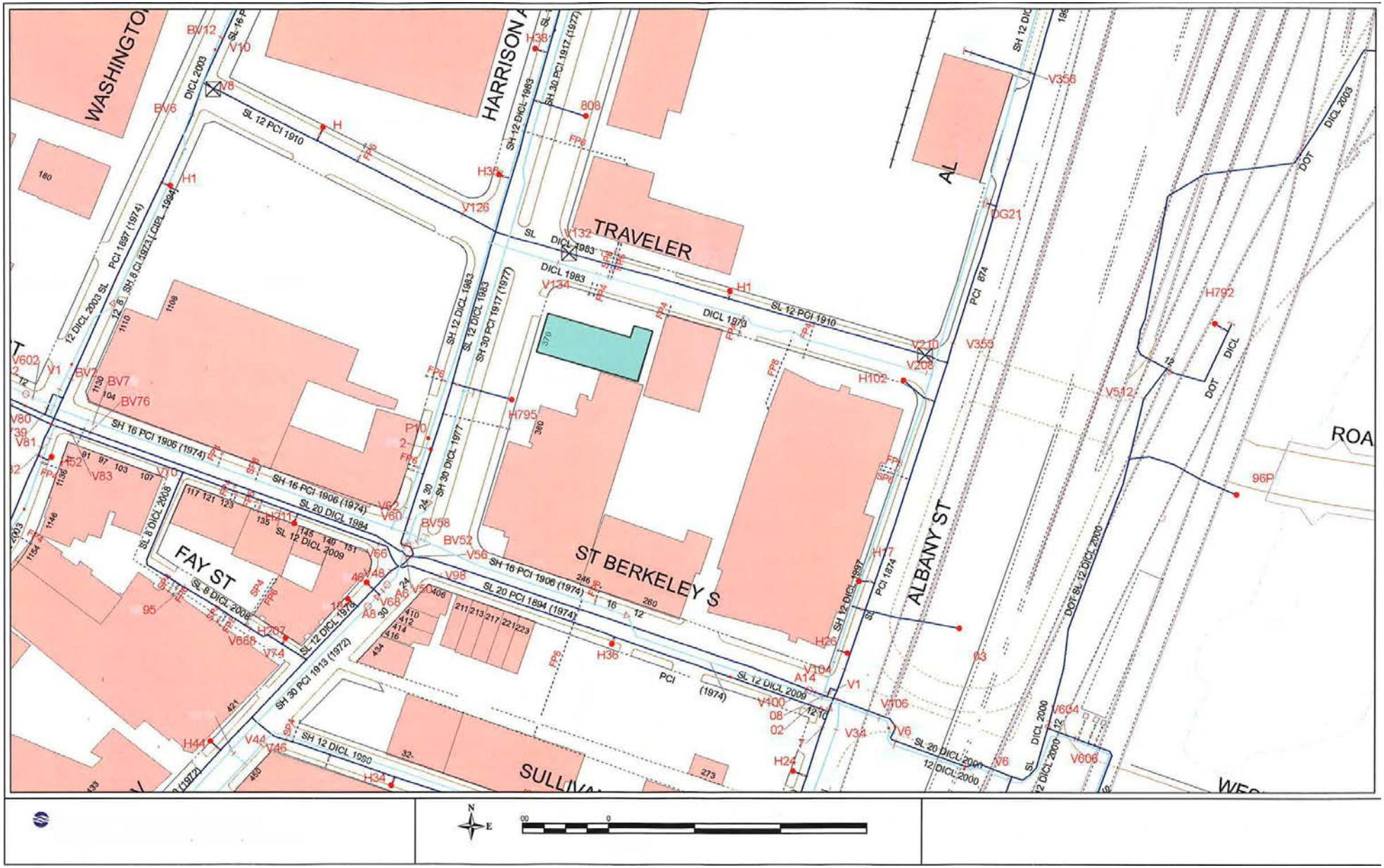
Utility Service	Connection Location
Domestic Water Services	BWSC 12-inch high service in Harrison Avenue and BWSC 8-inch high service in Traveler Street
Fire Supply Connections	BWSC 8-inch high service in Traveler Street and the 12-inch BWSC high service in Harrison Avenue
Sanitary Sewer Connection	BWSC 12-inch sanitary sewer in Harrison Avenue
Communications	Comcast and Verizon Services - TBD
Electric Power	Eversource network at East Berkeley Street
Natural Gas	National Grid (Keyspan) 24-inch low pressure service in Traveler Street

Based on initial investigations, the existing utility infrastructure systems have adequate capacity for the new service connections. Coordination meetings with the various utility companies will be conducted during design development.

8.7 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities and drainage improvements within public ways will be in accordance with the BWSC, the Boston Public

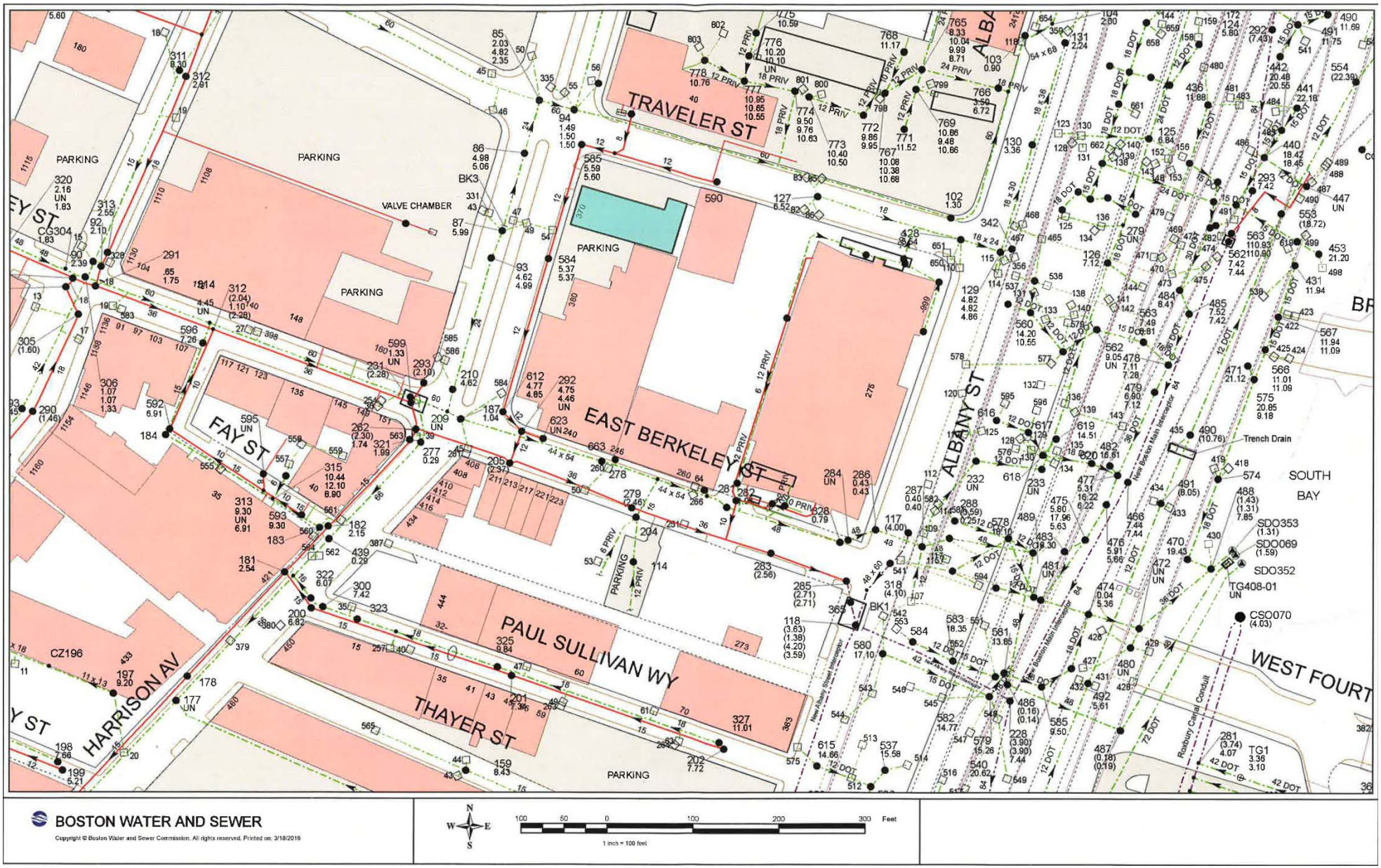
works Department, the Dig Safe program and governing utility company requirements. All necessary permits will be obtained before the commencement of work. Specific methods for constructing proposed water sewer and drainage systems will be reviewed by the BWSC as part of the Site Plan Review process.



370-380 Harrison Avenue Boston, Massachusetts

BRYANT ASSOCIATES 40 YEARS

Figure 8-1
Existing Sewer and Drain System



370-380 Harrison Avenue Boston, Massachusetts

BRYANT ASSOCIATES

Figure 8-2
Existing Water System

Chapter 9.0

Response to Comments

9.0 RESPONSE TO COMMENTS

9.1 Introduction

This chapter provides responses to the BPDA Scoping Determination and the associated comment letters that were received on the PNF filed with the BPDA on March 31, 2016. The letters have been reproduced and individual comments coded in the margins. Responses to the comments follow each individual letter and can be matched using the comment code numbers. Table 9-1 provides a list of letters received and the section of this chapter where responses are provided for each letter.

Table 9-1 BPDA Scoping Determination and Comment Letters Received

Section 9.2 BPDA Scoping Determination and City Comments

BPDA Scoping Determination	BPDA
Boston Groundwater Trust	BGWT
Boston Water and Sewer Commission	BWSC
Katie Pedersen, BPDA	KP
Michael Cannizzo, BPDA	MC
Boston Parks and Recreation Department	BPRD

Section 9.3 Public Comments on PNF

Brenton Clothing Company, LLC., Stuart M. Rose, Manager	BCC
More Than Words	MTW
Neptune Garment Company, John F. Kindregan, President	NGC
Old Dover Neighborhood Association	ODNA

9.2 Responses to BPDA Scoping Determination and City Comments

BOSTON REDEVELOPMENT AUTHORITY

SCOPING DETERMINATION
370-380 HARRISON AVENUE

SUBMISSION REQUIREMENTS
FOR DRAFT PROJECT IMPACT REPORT (DPIR)

PROPOSED PROJECT:	370-380 HARRISON AVENUE
PROJECT SITE:	370-380 HARRISON AVENUE, BOUNDED BY HARRISON AVENUE TO THE WEST, TRAVELER STREET TO THE NORTH, EAST BERKELEY STREET TO THE SOUTH, AND ALBANY STREET TO THE EAST
PROPONENT:	SOUTH END 10, LLC AND SOUTH END 11, LLC C/O RELATED BEAL
DATE:	SEPTEMBER 12, 2016

The Boston Redevelopment Authority ("BRA") is issuing this Scoping Determination pursuant to Section 80B-5 of the Boston Zoning Code ("Code"), in response to a Project Notification Form ("PNF") which South End 10, LLC and South End 11, LLC (collectively the "Proponent"), filed for the proposed 370-380 Harrison Avenue project (the "Proposed Project") on March 31, 2016. Notice of the receipt by the BRA of the PNF was published in the Boston Herald on March 31, 2016, which initiated a public comment period with a closing date of April 29, 2016. Pursuant to Section 80A-2 of the Code, the PNF was sent to the City's public agencies/departments and elected officials on March 31, 2016. The initial public comment period was subsequently extended until May 12, 2016, through mutual consent between the BRA and the Proponent. Pursuant to Section 80B-5.3 of the Code, a Scoping Session was held on April 20, 2016 with the City's public agencies/departments, where the proposal was reviewed and discussed.

On December 31, 2015, the Proponent filed a Letter of Intent ("LOI") in accordance with the Executive Order regarding Provision of Mitigation by Development Projects in Boston for the redevelopment of the former Quinzani's Bakery and Ho Kong Bean Sprout Co. properties located respectively at 380 and 370 Harrison Avenue in the South End neighborhood of Boston.

Written comments in response to the PNF from BRA staff, public agencies/departments, and elected officials, are included in **Appendix A** and must be answered in their entirety. Written comments in response to the PNF received by the BRA from the public are included in **Appendix B** and must be answered in their entirety. Written comments in response to the PNF received by the BRA from the Impact Advisory Group ("IAG") (if any) are included in **Appendix C** and must be answered in their entirety.

Comments received from BRA staff, public agencies/departments, and elected officials are included in **Appendix A:**

Specifically, they are:

- Christian Simonelli, Boston Groundwater Trust
- John P. Sullivan, Boston Water and Sewer Commission
- Katie Pederson, Boston Redevelopment Authority
- Michael Cannizzo, Boston Redevelopment Authority
- Carrie Marsh, Boston Parks and Recreation Department

Public comments received by the BRA during the comment period are included in **Appendix B.**

Impact Advisory Group ("IAG") member comments (if any) received by the BRA during the comment period are included in **Appendix C.**

The Scoping Determination requests information that the BRA requires for its review of the Proposed Project in connection with Article 80 of the Code, Development Review and Approval and other applicable sections of the Code.

I. PROJECT SITE

The site of the Proposed Project consists of an approximately 44,570 square foot (1.02 acres) parcel located at 370-380 Harrison Avenue between Traveler Street and East Berkeley Street in the South End neighborhood of Boston (the "Project Site"). The Project Site is currently occupied by the former Quinzani's Bakery and Ho Kong Bean Sprout Co., both of which are currently vacant.

II. PROJECT DESCRIPTION

The Proposed Project, as described in the PNF, includes the demolition of the existing structures on the site and the construction of an approximately 356,500 square foot, fourteen (14) story, mixed-use building facing Harrison Avenue and extending between Traveler and East Berkeley Streets. The proposed building is anticipated to include approximately two hundred eighty (280) residential units with a mix of rental and homeownership units (approximately 175 and 105, respectively) and up to approximately 6,000 square feet of ground floor commercial space. Approximately one hundred eighty (180) vehicle parking spaces will be provided in a three (3) level below grade parking garage for the residential component of the Proposed Project.

III. PREAMBLE

The Proposed Project is being reviewed pursuant to Article 80, Development Review and Approval, which sets forth a comprehensive procedure for project review of the following components: transportation, environmental protection, urban design, historic resources, infrastructure systems, site plan, tidelands, and Development Impact Project applicability. The Proponent is required to prepare and submit to the BRA a Draft Project Impact Report ("DPIR")

that meets the requirements of the Scoping Determination by detailing the Proposed Project's impacts and proposed measures to mitigate, limit or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications of Section 80B-3 (Scope of Large Project Review; Content of Reports) and Section 80B-4 (Standards for Large Project Review Approval), as required by the Scoping Determination. After submitting the DPIR, the Proponent shall publish notice of such submittal as required by Section 80A-2. Pursuant to Section 80B-4(c) (i) (3), the BRA shall issue a written Preliminary Adequacy Determination ("PAD") within sixty (60) days. Public comments, including the comments of public agencies, shall be transmitted in writing to the BRA no later than fifteen (15) days prior to the date by which the BRA must issue its PAD. The PAD shall indicate the additional steps, if any, necessary for the Proponent to satisfy the requirements of the Scoping Determination. If the BRA determines that the DPIR adequately describes the Proposed Project's impacts and, if appropriate, propose measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and that the requirements of further review are waived pursuant to Section 80B-5.4(c) (iv). Section 80B-6 requires the Director of the BRA to issue a Certification of Compliance indicating the successful completion of the Article 80 development review requirements before the Commissioner of Inspectional Services can issue any building permit for the Proposed Project.

IV. REVIEW/SUBMISSION REQUIREMENTS

In addition to full-size scale drawings, ten (10) copies of a bound booklet and an electronic copy (PDF format) containing all submission materials reduced to size 8-1/2" x 11", except where otherwise specified, are required. The booklet should be printed on both sides of the page. Bound booklets should be mailed directly to all of the IAG members. A copy of this scoping determination should be included in the booklet for reference. The electronic copy should be submitted to the BRA via the following website:
https://attachments.bostonredevelopmentauthority.org/

A. General Information

1. Applicant/Proponent Information
   a. Development Team

BPDA 1

      (1) Names

         (a) Proponent (including description of development entity and type of corporation, and the principals thereof)
         (b) Attorney
         (c) Project consultants and architect(s)

      (2) Business address, telephone number, FAX number and e-mail, where available for each

      (3) Designated contact person for each

b. Legal Information BPDA 2

(1) Legal judgements or actions pending concerning the Proposed Project

(2) History of tax arrears on property owned in Boston by Applicant

(3) Evidence of site control over project area, including current ownership and purchase options, if any, for all parcels in the Proposed Project, all restrictive covenants and contractual restrictions affecting the Proponent's right or ability to accomplish the Proposed Project, and the nature of the agreements for securing parcels not owned by the Applicant.

(4) Nature and extent of any and all public easements into, through, or surrounding the site.

2. Project Area

a. An area map identifying the location of the Proposed Project BPDA 3
b. Description of metes and bounds of project area or certified survey of the project area. BPDA 4
c. Current zoning BPDA 5

3. Project Description and Alternatives

a. The DPIR shall contain a full description of the Proposed Project and its components, including its size, physical characteristics, development schedule, costs, and proposed uses. This section of the DPIR shall also present analysis of the development context of the Proposed Project. Appropriate site and building plans to clearly illustrate the Proposed Project shall be required. BPDA 6
b. A description of alternatives to the Proposed Project that were considered shall be presented and primary differences among the alternatives, particularly as they may affect environmental and traffic/transportation conditions, shall be discussed. BPDA 7

4. Public Benefits BPDA 8

a. Anticipated employment levels including the following:
   (1) Estimated number of construction jobs
   (2) Estimated number of permanent jobs
b. Current and/or future activities and programs which benefit the host neighborhood, adjacent neighborhoods of Boston and the city at large, such as, child care programs, scholarships, internships, elderly

services, education and job training programs, public realm/infrastructure improvements, grant programs, etc.

c. Other public benefits, if any, to be provided.

5. Community Process

a. A list of meetings held and proposed with interested parties, including public agencies, abutters, elected officials, businesses and community groups. BPDA 9

b. Names and addresses of project area owners, abutters, and any community or business groups which, in the opinion of the applicant, may be substantially interested in or affected by the Proposed Project.

B. REGULATORY CONTROLS AND PERMITS

An updated listing of all anticipated permits or approvals required from other municipal, state or federal agencies, including a proposed application schedule shall be included in the DPIR. BPDA 10

A statement on the applicability of the Massachusetts Environmental Policy Act ("MEPA") should be provided. If the Proposed Project is subject to MEPA, all required documentation should be provided to the BRA, including, but not limited to, a copy of the Environmental Notification Form, decisions of the secretary of Environmental Affairs, and the proposed schedule for coordination with BRA procedure. BPDA 11

C. TRANSPORTATION COMPONENT

In addition to the information required to meet the specifications of Section 80B-3 and Section 80B-4 of the Code, the Proponent must also refer to the Boston Transportation Department ("BTD"), "Transportation Access Plan Guidelines" in preparing its studies. Proposed transportation network and infrastructure improvements/mitigation in the impacted area should also be listed and explained in this component. BPDA 12

D. ENVIRONMENTAL PROTECTION COMPONENT

The DPIR must address the comments of Katie Pedersen, Senior Land Use Planner/Sustainability Specialist, dated September 2, 2016 included in **Appendix A**. The DPIR should also include the most up to date Article 37/Interagency Green Building Committee ("IGBC") documentation.

Shadow

A shadow analysis shall be required for existing and build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn. It should be noted that due to time differences (daylight-savings vs. standard), the autumnal equinox shadows would not be the same as the vernal equinox shadows and therefore separate shadow studies are required for the vernal and autumnal equinoxes. BPDA 13

The shadow impact analysis must include net new shadow as well as existing shadow and must clearly show the incremental impact of the proposed new building. For purposes of clarity, new shadow should be shown in a dark, contrasting tone distinguishable from existing shadow. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the Proposed Project (i.e., at the winter solstice). The build condition(s) shall include all buildings under construction and any proposed buildings anticipated to be completed prior to completion of the Proposed Project. Shadow from all existing buildings within the shadow impact study area shall be shown. A North arrow shall be provided on all figures and street names shall be clearly identified.

Particular attention shall be given to existing or proposed public open spaces, plazas, park areas, sidewalks, pedestrian areas and walkways, adjacent to, and in the vicinity of the Proposed Project. Design or other mitigation measures to minimize or avoid any adverse shadow impact must be identified.

The above shadow analysis shall be required for any alternative required to be studied in accordance with Scoping Determination as well as the preferred development option.

Wind

A qualitative analysis of the potential pedestrian level wind impacts shall be required for the DPIR. This analysis shall determine potential pedestrian level winds adjacent to and in the vicinity of the project site and shall identify any areas where wind velocities are expected to exceed acceptable levels, including the Authority's guideline of an effective gust velocity of 31 mph not to be exceeded more than 1% of the time. BPDA 14

The qualitative analysis shall evaluate the effects of the major winds for the Boston area, including northwest, southwest, and easterly storm (northeast, east, southeast) winds, as well as annual winds. The evaluation shall include, in addition to the BRA's effective gust criterion, an analysis of the Melbourne comfort criteria for the locations tested. Tables presenting the wind analysis data and maps clearly indicating analysis locations, anticipated wind flow patterns, existing and future anticipated Melbourne comfort categories and actual wind speeds shall be included in the assessment.

For areas where wind speeds are projected to exceed acceptable levels, measures to reduce wind speeds and to mitigate potential adverse impacts shall be identified.

Daylight

A daylight analysis for both build and no-build conditions shall be conducted by measuring the percentage of sky dome that is obstructed by the Proposed Project building and evaluating the net change in obstruction. If alternative massing studies are requested as part of the Article 80 development review process, daylight analysis of such alternatives shall also be conducted for comparison. The study should treat the following elements as controls for data comparison: existing conditions, the context of the area, and the as-of-right background zoning envelope. BPDA 15

Solar Glare

An evaluation of potential solar glare impact is required, if the project incorporates the substantial use of glass-facades. BPDA 16

As applicable, this analysis must measure potential reflective glare from the building onto potentially affected streets and public open spaces in order to determine the potential for visual impairment or discomfort due to reflective spot glare. Mitigation measures to eliminate any adverse reflective glare must be identified. Technical data used for the analysis must be included.

Air Quality

BPDA 17

Existing and projected future air quality in the project vicinity is expected to conform to the National Ambient Air Quality Standards (NAAQS) and U.S. Department of Housing and Urban Development (HUD) requirements for residential and other sensitive receptors.

However, a microscale air quality (carbon monoxide) analysis is required for any intersection (including the proposed garage entrances/exits) where level of service (LOS) is expected to deteriorate to D and the Proposed Project causes a 10 percent increase in traffic, or where the level of service is E or F and the Proposed Project contributes to a reduction of LOS. The methodology and parameters of the traffic-related air quality analysis, if required, must be approved in advance by the BRA and the Massachusetts Department of Environmental Protection, and shall be consistent with U.S. EPA guidance (e.g., *Guideline For Modeling Carbon Monoxide From Roadway Intersections*, US Environmental Protection Agency, Office of Air Quality Planning and Standards, Technical Support Division; Research Triangle Park, NC; EPA-454/R-92-005; November 1992). The results of the air quality analysis shall be compared to the Massachusetts State Implementation Plan to determine project compliance with the Plan. Mitigation measures to eliminate or avoid any violation of air quality standards must be described.

An indirect source air quality analysis of the operation of the proposed modular system parking garage should be prepared to determine potential air quality impacts on nearby sensitive receptors and compliance with air quality standards, as applicable. Emissions should be estimated using appropriate U.S. EPA guidance. The EPA SCREEN3 model should be used to calculate maximum CO impacts from the garage at the various sensitive receptors. CO monitors shall be required for any enclosed parking garage. A description of the monitors and operation of the monitors is required.

A description of the project's heating and mechanical systems and of the parking garage ventilation system, including location of intake and exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality and on any sensitive receptors from operation of the heating, mechanical, and exhaust systems, including the building's emergency generator, shall be required. Measures to avoid any violation of air quality standards shall be described, and sidewalk vents for the garages are prohibited.

Solid and Hazardous Wastes

The presence of any contaminated soil or groundwater and any underground storage tanks at the project site shall be evaluated and remediation measures to ensure their safe removal and disposal shall be described. BPDA 18

If asbestos, asbestos-containing materials, lead paint or other hazardous compounds (e.g., PCBs) are identified during the demolition, renovation or removal activities, the handling and disposal must be in compliance with Massachusetts Department of Environmental Protection, the Boston Public Health Commission and the Inspectional Services Department guidelines and requirements.

In addition, the DPIR shall quantify and describe the generation, storage, and disposal of all solid wastes from the construction and operation of the Proposed Project. In addition, measures to promote the reduction of waste generation and encourage recycling, particularly for paper, plastics, glass, metals, and other recyclable products, and compliance with the City's recycling program, shall be described. BPDA 19

Noise

The DPIR shall establish the existing noise levels at the project site and vicinity based upon a noise-monitoring program. Calculations of future noise levels after project completion (based on appropriate modeling), and demonstrated compliance with the Design Noise Levels established by the U.S. Department of Housing and Urban Development for residential and other sensitive receptors, and with all other applicable Federal, State, and City of Boston noise criteria and regulations shall be required. BPDA 20

An analysis of the potential noise impacts from project-generated traffic, from the project's mechanical and exhaust systems, as well as the effects of aircraft flyover noise (from Logan Airport), and compliance with applicable regulations of the City of Boston and Commonwealth of Massachusetts shall be required. A description of the project's mechanical and exhaust systems and their proposed location shall be included. Measures to minimize and eliminate adverse noise impacts on nearby sensitive receptors, including the project itself, from traffic noise and mechanical systems shall be described.

Storm Water Management

The DPIR shall contain an evaluation of the Project Site's existing and future storm water drainage and storm water management practices. The DPIR shall illustrate existing and future drainage patterns from the project site and shall describe and quantify existing and future storm water runoff from the site and the Proposed Project's impacts on site drainage. The analysis should be performed based on 2-, 10-, 25- and 100- year rainfall events based on a 24-hour duration. The Proposed Project's storm water management system, including best management practices to be implemented, measures proposed to control and treat storm water runoff and to maximize on-site retention of storm water, measures to prevent groundwater contamination, measures to prevent harbor pollution, and compliance with the Commonwealth's Storm Water Management Policies, also shall be described. The DPIR shall describe the project area's storm BPDA 21

water drainage, to which the project will connect, including the location of storm water drainage facilities and ultimate points of discharge.

If the project involves the disturbance of one acre or more of land, a National Pollution Discharge Elimination System (NPDES) General Permit for Construction consistent with the requirements of U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Protection and the Boston Water and Sewer Commission will be required. If such permit is required, a storm water pollution prevention plan must be prepared and submitted prior to commencing construction. A copy of the plan should be provided to the BRA. BPDA 22

Geotechnical Impact/Groundwater

To the extent not provided in the PNF, an analysis of existing sub-soil conditions at the project site, groundwater levels, potential for ground movement and settlement during excavation and foundation construction, and potential impact on adjacent buildings, utility lines, and the roadways shall be required. This analysis shall also include a description of the foundation construction methodology (e.g., underground garage if applicable, pier pilings), the amount and method of excavation, and measures to prevent any adverse effects on adjacent buildings, utility lines, roadways and the harbor. BPDA 23

Maintaining groundwater levels in the City of Boston is required. Consultation with the Boston Groundwater Trust regarding potential groundwater impacts in areas influenced by tidal fluctuations is recommended. Measures to ensure that groundwater levels will be maintained and will not be lowered during or after construction shall be described. If on-going pumping is required, the metering of discharge must be conducted with oversight by the Boston Water and Sewer Commission. Levels reported shall be based on Boston City Base (BCB). BPDA 24

Construction Impacts

As applicable, construction impact analysis shall include a description and evaluation of the following: BPDA 25

(a) Potential dust and pollutant emissions and mitigation measures to control these emissions, including participation in the Commonwealth's Clean Construction Initiative.

(b) Potential noise generation and mitigation measures to minimize increase in noise levels.

(c) Location of construction staging areas and construction worker parking; measures to encourage carpooling and/or public transportation use by construction workers.

(d) Construction schedule, including hours of construction activity.

(e) Access routes for construction trucks and anticipated volume of construction truck traffic.

(f) Construction methodology (including foundation and piling construction), amount and method of excavation required, disposal of the excavated material, description of foundation support, maintenance of groundwater levels, and measures to prevent any adverse effects or damage to adjacent structures and infrastructure.

(g) Method of demolition of existing buildings on the site and disposal of the demolition waste, as applicable.

(h) Potential for the recycling of construction and demolition debris, including asphalt from existing parking lots.

(I) Identification of best management practices to control erosion and to prevent the discharge of sediments and contaminated groundwater or storm water runoff into the City's drainage system during the construction period.

(j) Coordination of project construction activities with other major construction projects being undertaken in the project vicinity at the same time, including scheduling and phasing of individual construction activities.

(k) Impact of project construction on rodent populations and description of the proposed rodent control program, including frequency of application and compliance with applicable City and State regulatory requirements.

(l) Measures to protect the public safety.

Rodent Control

Compliance with city and state rodent control program requirements must be ensured. Rodent inspection monitoring and treatment, if necessary, should be carried out before, during and at the completion of the construction period. Extermination for rodents shall be required for issuance of permits for demolition, excavation, foundation and basement rehabilitation. Licensed exterminators shall indicate before and during construction activity whether or not rodent activity is identified. Compliance with this policy will be monitored by the Rodent Control Unit of the Inspectional Services Department. BPDA 26

Sustainable Design

The Proponent must analyze project impacts on the surrounding environment that are attributable to forecasted climate conditions over the full duration of the expected life of the project. Utilizing the best available science, identify changes in the climate and environment and how such changes will affect the project's environmental impacts including the survivability, integrity and safety of the project and its inhabitants. Climate change conditions may include, but not be limited to, sea-level rise, higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts, more sever freezing rain and heavy rainfall events, and increased wind gusts. Include analysis of secondary and cascading impacts including more frequent and longer interruptions of utility services BPDA 27

including electrical, gas, and telecommunication systems, and disruptions of transportation systems and networks.

The Proponent must incorporate Climate Change Preparedness and Resiliency strategies into all relevant components of the project such as Transportation, Infrastructure Systems, Environmental Protection, Urban Design, Landscape, Sustainable Development, Historic Resources, and Tidelands.

The Proponent must submit an updated and final Climate Change Preparedness and Resiliency Checklist along with a written response to the IGBC. The Final Climate Change Preparedness and Resiliency Checklist and Response must be submitted in conjunction with the submittal of the Final Design and Approval package for review by the IGBC. No Final Design Approval/Article 80 documents shall be authorized by the BRA until the final Climate Change Preparedness and Resiliency Checklist and Response have been reviewed by the IGBC.

E. URBAN DESIGN COMPONENT

In addition to the information required to meet the specifications of Section 80B-3 and Section 80B-4 of the Code, the Proponent must address the comments outlined by the BRA's Urban Design Department, included in **Appendix A**. BPDA 28

F. INFRASTRUCTURE SYSTEMS COMPONENT

The DPIR must address the comments of the Boston Water and Sewer Commission ("BWSC"), dated August 30, 2016, and the Boston Groundwater Trust dated May 4, 2016 included in **Appendix A**. An infrastructure impact analysis must be performed. The standard scope for infrastructure analysis is outlined in the letter submitted by the BWSC. BPDA 29

G. PUBLIC NOTICE

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the City of Boston a public notice of the submission of the DPIR to the BRA as required by Section 80A-2. This notice shall be published within five (5) days after the receipt of the DPIR by the BRA. Therefore, public comments shall be transmitted to the BRA within forty five (45) days of the publication of the notice. A draft of the public notice must be submitted to the BRA for review prior to publication. A sample of the public notice is attached as **Appendix D**. BPDA 30

Following publication of the public notice, the Proponent shall submit to the BRA a copy of the published notice together with the date of publication.

H. INCLUSIONARY DEVELOPMENT POLICY/ AFFORDABLE HOUSING COMPONENT

As indicated in the PNF, the Proposed Project will comply with the BRA's Inclusionary Development Policy ("IDP") and the affordable housing requirements for Planned Development Areas under Article 64 of the Code. The Proponent must explain as to how it intends on complying with both requirements. Details should include the number of units to be BPDA 31

created, the incomes of the households to be reached, the sizes of the units, and the anticipated unit mix for the on-site IDP/ affordable housing component. If the Proponent intends on meeting any portion of its IDP/affordable housing creation obligation through an off-site housing creation contribution to the Inclusionary Development Program Fund, a breakdown of the approximate amount being contributed should be included.

I. ACCESSIBILITY CHECKLIST

As part of the DPIR, the Proponent must include an up to date and completed Article 80 Accessibility Checklist for the Proposed Project. A blank Accessibility Checklist is attached as **Appendix E.** BPDA 32

BPDA SCOPING DETERMINATION

BPDA 1 **Applicant/Proponent information.**

Section 1.2 identifies the development team and includes the requested contact information.

BPDA 2 **Legal Information.**

Section 1.4 provides the requested legal information.

BPDA 3 **An area map identifying the location of the proposed Project.**

Figure 2-1 identifies the location of the Project.

BPDA 4 **Description of metes and bounds of project area or certified survey of the project area.**

A survey of the Project Site is included in Appendix A.

BPDA 5 **Current zoning.**

Section 2.5 includes zoning information.

BPDA 6 **A full description of the Proposed Project and its components.**

Section 2.2 provides the Project description.

BPDA 7 **A description of alternatives to the Proposed Project that were considered.**

Section 2.4 provides a description of an alternative with an FAR of 6.5.

BPDA 8 **Public benefits.**

As mentioned in Section 1.3, the Project is anticipated to create approximately 400 construction jobs and 40 permanent jobs upon stabilization.

The Project includes a comprehensive public realm plan that will greatly enhance the Project Site and will create inviting and publicly accessible open space. Public improvements will include streetscape improvements, landscaping and plantings, lighting, seating, trash receptacles and bike racks. The Project will promote pedestrian activity and enhance the revitalization of the Project Site and neighborhood.

Section 1.3 discusses other public benefits offered by the Project.

BPDA 9 **Community process.**

Section 1.5 identifies those groups and meetings held to-date. The Proponent looks forward to continued productive dialogue with interested stakeholders to ensure that community concerns are addressed as the Project moves forward.

BPDA 10 **Updated listing of all anticipated permits or approvals required from other municipal state or federal agencies.**

Section 2.6 includes the anticipated permits and approvals that are anticipated to be needed.

BPDA 11 **A statement on the applicability of the Massachusetts Environmental Policy Act.**

The Proponent anticipates filing an Environmental Notification Form with the Secretary of Energy and Environmental Affairs. A copy of that filing will be provided to the BPDA.

BPDA 12 **Proposed transportation network and infrastructure improvements/mitigation in the impacted area.**

The Proponent is committed to implementing a robust TDM program, which is described in Chapter 3 of the DPIR. The Proponent will also be required to complete a TAPA with the BTD, which will outline commitments for transportation improvements in the area. Specific improvements have not been identified at this time. The Proponent will continue to coordinate with BTD to develop the TAPA.

BPDA 13 **Shadow analysis.**

Section 4.2 provides the shadow analysis.

BPDA 14 **A qualitative analysis of the potential pedestrian level wind impacts.**

Section 4.1 provides a qualitative wind analysis.

BPDA 15 **Daylight analysis.**

Section 4.3 provides the daylight analysis.

BPDA 16 **Solar glare impacts, if the project incorporates the substantial use of glass facades.**

The Project design does not include the use of highly reflective materials. Where glass facades are proposed, glass with low reflectivity will be utilized to avoid adverse impacts from spot glare. Steps will be taken during final design to mitigate areas where reflected sunlight and glare have the potential to impact vehicular

traffic or pedestrian areas. If highly reflective materials are selected, a solar glare analysis will be completed.

BPDA 17 Microscale air quality (carbon monoxide) analysis.

Section 3.2.5 of the PNF included an air quality analysis, as mentioned in the comment letter from Kathleen Pedersen (below) which states that additional analysis is not required. Any new stationary sources will be reviewed by MassDEP during permitting under the Environmental Results Program, as required.

BPDA 18 Evaluation of the presence of any contaminated soil or groundwater and any underground storage tanks.

Section 4.9.1 describes existing soil and groundwater conditions to the extent they are known at the time of this filing. Additional characterization of the site's soil and groundwater will be conducted and, if necessary, soil and groundwater will be managed in accordance with applicable federal, state, and local laws and regulations.

BPDA 19 Generation, storage, and disposal of all solid wastes from the construction and operation of the Project and measures to promote the reduction of waste generation and encourage recycling.

Section 4.11.11 describes the generation, storage, and disposal of all solid wastes during Project construction. Sections 4.9.2 and 4.9.3 describe the Project's solid waste management program during operation, including measures to promote the reduction of waste generation and encourage recycling.

BPDA 20 Noise analysis.

Section 4.10 provides a noise analysis.

BPDA 21 Evaluation of the Project Site's existing and future stormwater drainage and stormwater management practices.

Stormwater runoff from the at-grade walkways, driveways, garage ramps, Mid-block Connector and roof tops will be collected by a stormwater drainage piping network surrounding the site adjacent to Traveler Street, Harrison Avenue, and East Berkeley Street. Stormwater runoff from the roof will be conveyed to the ground level through five, 10-inch diameter cast iron downspout connections.

The stormwater flows will be discharged underground through a series of inter-connected precast concrete galley chambers for the purpose of groundwater recharge. The precast concrete galley chambers will have an overflow pipe connected to BWSC's 36-inch diameter storm drain in East Berkeley Street. This

municipal storm drain discharges into the Fort Point Channel, at Frontage Road, near the West Fourth Street Bridge.

Stormwater quality from the site at full build-out will not change from the existing condition because the entire site will remain close to 100-percent impervious. Stormwater quantity projections are based on the following criteria:

Area = 44,570 sf Percent Impervious = 100% Storm Duration = 24 hours

Stormwater Runoff Volumes

Storm Frequency	*Precipitation (inches)*	*Quantity (Cu. ft.)*	*Quantity (gallons)*
2-year	3.25	12,100	90,500
10-year	5.13	19,100	142,900
25-year	6.30	23,400	175,000
100-year	8.12	30,200	225,900

Reference:
NOAA
Hydrometeorological Design Studies Center
Precipitation Frequency Data Service – (PFDS)

Section 8.5.2 provides a description of BMPs.

BPDA 22 National Pollution Discharge Elimination System (NPDES) General Permit for Construction.

The Project Site is more than one acre and the Proponent will prepare a Notice of Intent under the U.S. EPA's Construction General Permit (CGP) program. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared consistent with the requirements of the CGP program. A copy of the SWPPP will be provided to the BPDA, as requested. The Project will comply with MassDEP stormwater management standards. See Section 8.4 for addition information regarding stormwater management.

BPDA 23 Existing sub-soil conditions and a description of the foundation construction methodology.

Section 4.8 includes information on subsurface conditions, groundwater, and foundation methodology.

BPDA 24 Measures to ensure that groundwater levels will be maintained and will not be lowered during or after construction.

Section 4.8.2 includes information regarding the Project's consistency with the requirements of the Groundwater Conservation Overlay District.

BPDA 25 Construction impact analysis.

Section 4.11 includes information regarding construction impacts and mitigation.

BPDA 26 Compliance with city and state rodent control program requirements.

Section 4.11.13 describes compliance with city and state rodent control program requirements.

BPDA 27 Climate change.

An analysis of forecasted climate conditions over the full duration of the expected life of the Project is described in Section 5.3. The Climate Change Checklist is included as Appendix C.

BPDA 28 BPDA's Urban Design comments.

See Responses to Michael Cannizzo, below.

BPDA 29 Boston Water and Sewer Commission and the Boston Groundwater Trust comments.

See Responses to BWSC and the Boston Groundwater Trust, below.

BPDA 30 Public notice.

A Public Notice of the submission of the DPIR will be published in the *Boston Herald* in accordance with Section 80A-2 of the Boston Zoning Code.

BPDA 31 Inclusionary Development Policy.

To the extent the FAR of the Project is 8.0, at least 20% of the units will be Affordable Housing as such term is defined in the Boston Zoning Code.

BPDA 32 Accessibility checklist.

An up to date and complete Article 80 Accessibility Checklist is included in Appendix D.

Boston
Groundwater Trust

229 Berkeley St, Fourth Floor, Boston, MA 02116
617.859.8439 voice
www.bostongroundwater.org

May 4rth, 2016

Casey Hines, Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Subject: 370-380 Harrison Avenue Project Notification Form

Dear Ms. Hines:

Thank you for the opportunity to comment on the project notification form (PNF) for 370-380 Harrison Avenue. The Boston Groundwater Trust was established by the Boston City Council to monitor groundwater levels in sections of Boston where the integrity of building foundations is threatened by low groundwater levels and to make recommendations for solving the problem. Therefore my comments are limited to groundwater related issues.

The project is located in the Groundwater Conservation Overlay District (GCOD) established under Article 32 of the Zoning Code. As stated in the PNF and confirmed at the scoping session the project is proposed to be designed and constructed to comply with the requirements of Article 32.

As confirmed at the scoping session the GCOD requires both the installation of a recharge system and a demonstration that the project cannot cause a reduction in groundwater levels on site or on adjoining lots. As stated in the PNF and confirmed at the scoping session final foundation design will be completed after the subsurface exploration program is completed and the structural loads are known. Also stated in the PNF and confirmed at the scoping session two or three levels of underground parking are anticipated. The PNF states that steel sheet piles or slurry wall will be used and extend into the marine clay layer below the lowest garage level by 5 to 15 feet. The PNF also states that waterproofing will be installed against the exterior face of the portions of the garage which extend below observed and predicted groundwater levels as a permanent groundwater cut-off measure. Before the GCOD zoning approval can be put in place, the proponent must provide the Authority and the Trust a letter stamped by a professional engineer registered in Massachusetts that details how it will accomplish what is stated in the PNF and meets the GCOD requirement for no reduction in groundwater levels on site or on adjoining lots. BGWT 1

The PNF states that some local dewatering may be required during the construction process and that the project to the extent possible will attempt to infiltrate that water into the ground outside the building footprint.

As stated in the PNF and confirmed at the scoping session groundwater levels will be monitored prior to, during, and following construction to ensure adequate groundwater levels are maintained within the Project vicinity. The data will be furnished to the Trust and the Authority on a weekly basis. In the event that groundwater levels drop below the observed pre-construction baseline levels during construction, provisions must be in place to halt construction and dewatering until the cause is found and remedied. I look forward to working with the proponents Engineer on reviewing the monitoring wells in the area to be read and reported. BGWT 2

I look forward to continuing to work with the proponent and the Authority to assure that this project can have only positive impacts on area groundwater levels.

Very truly yours,

Christian S. Simonelli

Christian Simonelli
Executive Director

CC: Kathleen Pederson, BRA
Maura Zlody, BED

BOSTON GROUNDWATER TRUST

BGWT 1 **The proponent must provide the Authority and the Trust a letter stamped by a professional engineer registered in Massachusetts that details how it will accomplish what is stated in the PNF and meets the GCOD requirement for no reduction in groundwater levels on site or on adjoining lots.**

The Proponent will provide the Trust and the BPDA a letter stamped by a professional engineer registered in Massachusetts that details compliance with the GCOD requirements.

BGWT 2 **In the event that groundwater levels drop below the observed pre-construction baseline levels during construction, provisions must be in place to halt construction and dewatering until the cause is found and remedied.**

Provisions will be in place to halt construction and dewatering in the event that groundwater levels drop below the observed pre-construction baseline levels during construction, until the cause is found and remedied.

Boston Water and Sewer Commission

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

August 30, 2016

Mr. Raul Duverge
Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Re: 370-380 Harrison Avenue, South End
Project Notification Form

Dear Mr. Duverge:

The Boston Water and Sewer Commission (Commission) has reviewed the Project Notification Form (PNF) for the proposed 370-380 Harrison Avenue project located at 370-380 Harrison Avenue in the South End neighborhood.

The project site consists of three contiguous parcels totaling 44,570 square foot (sf). The site is currently occupied by vacant buildings that will be demolished. The proponent, South End 10, LLC and South End 11, LLC, proposes to construct a new 14-story, up to approximately 356,500 sf, mixed use building with ground floor commercial uses and residential above, as well as three levels of below grade parking. In addition to the 280 unit residential unit building, the proponent proposes new open space and an improved pedestrian experience around the site. The project site is bounded by Traveler Street to the north, East Berkeley Street to the south and Harrison Avenue to the west.

According to the PNF, the proposed water demand is 111,000 gallons per day (gpd). The Commission owns and maintains an 8-inch Southern High water main in Traveler Street, a 16-inch Southern High and a 20-inch Southern Low water main in East Berkeley Street and a 12-inch and a 30-inch Southern High and a 12-inch South Low water main in Harrison Avenue.

According to the PNF, the proposed sewage generation is 100,000 gpd. For sewage and storm drainage service, the site is served by a 12-inch sanitary sewer and a 60-inch storm drain in Traveler Street, a 36-inch sanitary sewer and a 44-inch by 54-inch storm drain in East Berkeley Street, and a 12-inch sanitary sewer and 24-inch storm drain in Harrison Avenue.

The Commission has the following comments regarding the PNF:

General

1. Prior to demolition of any buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The proponent must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued. BWSC 1

2. All new or relocated water mains, sewers and storm drains must be designed and constructed at South End 10, LLC and South End 11, LLC's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations. BWSC 2

3. The Department of Environmental Protection (DEP), in cooperation with the Massachusetts Water Resources Authority and its member communities, is implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. In April of 2014, the Massachusetts DEP promulgated new regulations regarding wastewater. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these new regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. In this regard, any new connection or expansion of an existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, a minimum ratio of 4:1 for I/I removal to new wastewater flow added is used. The Commission supports the policy, and will require proponent to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided on the project site plan. BWSC 3

4. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at http://bostoncompletestreets.org/ BWSC 4

5. South End 10, LLC and South End 11, LLC should be aware that the US Environmental Protection Agency issued the Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, South End 10, LLC and South End 11, LLC will be required to apply for a RGP to cover these discharges. BWSC 5

6. The project sites are located within Boston's Groundwater Conservation Overlay District (GCOD). The district is intended to promote the restoration of groundwater and reduce the impact of surface runoff. Projects constructed within the GCOD are required to include provisions for retaining stormwater and directing the stormwater to the groundwater table for recharge. BWSC 6

7. South End 10, LLC and South End 11, LLC is advised that the Commission will not allow buildings to be constructed over any of its water lines. Also, any plans to build over Commission sewer facilities are subject to review and approval by the Commission. The project must be designed so that access, including vehicular access, to the Commission's water and sewer lines for the purpose of operation and maintenance is not inhibited. BWSC 7

8. It is South End 10, LLC and South End 11, LLC's responsibility to evaluate the capacity of the water, sewer and storm drain systems serving the project site to determine if the systems are adequate to meet future project demands. With the site plan, South End 10, LLC and South End 11, LLC must include a detailed capacity analysis for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the proposed project will have on the Commission's water, sewer and storm drainage systems. BWSC 8

Water

1. South End 10, LLC and South End 11, LLC must provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project BWSC 9

with the site plan. Estimates should be based on full-site build-out of the proposed project. South End 10, LLC and South End 11, LLC should also provide the methodology used to estimate water demand for the proposed project.

2. South End 10, LLC and South End 11, LLC should explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. In particular, South End 10, LLC and South End 11, LLC should consider outdoor landscaping which requires minimal use of water to maintain. If South End 10, LLC and South End 11, LLC plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should be considered. BWSC 10

3. South End 10, LLC and South End 11, LLC is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. South End 10, LLC and South End 11, LLC should contact the Commission's Meter Department for information on and to obtain a Hydrant Permit. BWSC 11

4. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, South End 10, LLC and South End 11, LLC should contact the Commission's Meter Department. BWSC 12

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application South End 10, LLC and South End 11, LLC will be required to submit a Stormwater Pollution Prevention Plan. The plan must: BWSC 13

   - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater or construction debris to the Commission's drainage system when construction is underway.

   - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and the location of major control structures or treatment structures to be utilized during the construction.

- Specifically identify how the project will comply with the Department of Environmental Protection's Performance Standards for Stormwater Management both during construction and after construction is complete.

2. Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. South End 10, LLC and South End 11, LLC is responsible for determining if such a permit is required and for obtaining the permit. If such a permit is required, it is required that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above. BWSC 14

3. The Commission encourages South End 10, LLC and South End 11, LLC to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers. BWSC 15

4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. South End 10, LLC and South End 11, LLC is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. If the dewatering drainage is contaminated with petroleum products, South End 10, LLC and South End 11, LLC will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge. BWSC 16 BWSC 17

5. South End 10, LLC and South End 11, LLC must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. BWSC 18

6. The Massachusetts Department of Environmental Protection (MassDEP) established Stormwater Management Standards. The standards address water quality, water quantity and recharge. In addition to Commission standards, South End 10, LLC and South End 11, LLC will be required to meet MassDEP Stormwater Management Standards. BWSC 19

7. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system. BWSC 20 BWSC 21

8. The Commission requests that South End 10, LLC and South End 11, LLC install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. South End 10, LLC and South End 11, LLC should contact the Commission's Operations Division for information regarding the purchase of the castings. BWSC 22

9. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. South End 10, LLC and South End 11, LLC is advised to consult with the Commission's Operations Department with regards to grease traps. BWSC 23

10. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Services Department, include requirements for separators. BWSC 24

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/afh

cc: David Chattman, South End 10, LLC and South End 11, LLC
M. Zlody, BED via e-mail
P. Larocque, BWSC via e-mail

BOSTON WATER AND SEWER COMMISSION

BWSC 1 **Prior to demolition of any buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements.**

The Proponent will develop a utility service connection discontinuance plan to be included in the construction contract documents. Abandoned utilities will be cut and capped in accordance with BWSC standards, and the Proponent will file the relevant forms and permits.

BWSC 2 **Site plan and a General Service Application.**

The site plan and General Service Application for the Project will be submitted to the BWSC for Site Plan Approval in accordance with BWSC standards.

BWSC 3 **Develop a consistent inflow reduction plan.**

There is no opportunity on site for Infiltration/Inflow removal because the existing sewer and drainage infrastructure will be discontinued. The Proponent will file the BWSC 4:1 Infiltration/Inflow Reduction Calculation form.

BWSC 4 **The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs.**

Within the Green and Furnishing Zone, permeable paving and planting beds are proposed on Harrison Avenue. Permeable paving is also proposed on East Berkeley Street, while planting beds are proposed on Traveler Street. Structural soil will be provided on all streets under paving for all trees. The Proponent will maintain the sidewalk and green infrastructure.

BWSC 5 **Groundwater contaminated with petroleum products.**

If groundwater contamination is encountered during construction, the Proponent will engage a Licensed Site Professional and will secure coverage, as necessary, under the Remediation General Permit for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges for contaminated groundwater discharges.

BWSC 6 **Construction within the GCOD.**

The Boston Groundwater Trust has confirmed that the Project is within the overlay district. Stormwater runoff will be stored on-site with precast concrete galley chamber sections and redirected to the groundwater table for recharge. See Section 8.4 for addition information regarding stormwater management.

BWSC 7 **Access, including vehicular access, to the Commission's water and sewer lines for the purpose of operation and maintenance must not be inhibited.**

Adequacy of access to the BWSC facilities will be evaluated during the Site Plan Review process.

BWSC 8 **Include a detailed capacity analysis for the water, sewer and storm drain systems serving the project site, as well as an analysis of the impacts the Project will have on the Commission's water, sewer and storm drainage systems with the site plan.**

With the site plan, the Proponent will provide a hydrant flow test analysis. The Proponent will also provide an analysis of the capacity of the water, sanitary sewer and storm drainage facilities in the streets adjacent to the site.

BWSC 9 **Provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the Project with the site plan.**

The estimates of the peak and continuous maximum water demand will be provided with the site plan.

BWSC 10 **Explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code.**

The Project team is evaluating measures to conserve water to the extent practicable.

BWSC 11 **Obtain a Hydrant Permit for use of any hydrant during the construction phase of this project.**

A Hydrant Permit will be submitted for all hydrant rentals.

BWSC 12 **Meter transmitter units.**

The Project design team will review water meter requirements with BWSC during the design phase to ensure the Project is meter ready.

BWSC 13 **Submit a Stormwater Pollution Prevention Plan.**

A SWPPP will be submitted as required.

BWSC 14 **If NPDES CGP is required, a copy of the permit and any pollution prevention plan prepared pursuant to the permit must be provided to the Commission's Engineering Services Department, prior to the commencement of construction.**

The Project will submit a Notice of Intent under the CGP program and the relevant permit documents will be provided to the BWSC during the Site Plan Review process.

BWSC 15 **Explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.**

Additional opportunities for protecting stormwater quality are being evaluated on an on-going basis.

BWSC 16 **The discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission.**

Dewatering Discharge Permits will be procured as required.

BWSC 17 **If the dewatering drainage is contaminated with petroleum products a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge must be obtained.**

A Remediation General Permit from the U.S. EPA will be obtained if required.

BWSC 18 **Investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system.**

All feasible methods for retaining stormwater on-site are being evaluated.

BWSC 19 **MassDEP Stormwater Management Standards.**

The Project will comply with the MassDEP Stormwater Management Standards. Section 8.4.3 describes how the Project will comply with those Standards.

BWSC 20 **Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided.**

Plans for separate sanitary sewer and stormwater drainage service connections will be provided with the Site Plan Review submittal.

BWSC 21 **The Commission requires that existing stormwater and sanitary sewer service connections, which are to be reused by the Project, be dye tested to confirm they are connected to the appropriate system.**

There are no plans to re-use existing sanitary sewer and storm drain services.

BWSC 22 **Install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this Project.**

The Project will install the casting plaques as directed. Plans for the locations of the plaques will be included in the Site Plan Review submittal.

BWSC 23 **If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations.**

The Project will comply with all Sewer Use Regulations. Plans will be submitted to the BWSC Operations Department and will be included in the Site Plan Review submittal.

BWSC 24 **The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations.**

The floor drain system in the underground parking garage will include oil separators. Drainage will flow through oil separators prior to discharge to a sanitary sewer lateral connected to the BWSC sanitary sewer system.

BRA MEMORANDUM

TO: Raul DuVerge

FROM: Katie Pedersen

DATE: September 15, 2016

RE: 370-380 Harrison Avenue
Boston, Massachusetts
Project Notification Form
Amended Comment Letter

I have reviewed the Project Notification Form (the "PNF") dated March 31, 2016 and submit the following comments for the Environmental Protection component. South End 10, LLC c/o Related Beal (the "Proponent") is proposing the demolition the former Quinzani's Bakery and Ho Kong Bean Sprout buildings, currently located on three contiguous parcels of land located between East Berkeley Street and Traveler Street at 370-380 Harrison Avenue and the construction of an approximately 14-story mixed-use building with ground floor commercial uses and residential as well as three levels of below-grade parking (the "Proposed Project").

Wind

The Proponent has stated that the Proposed Project building is designed to be a maximum of 150 feet in height, similar in height to adjacent existing and proposed buildings. Accordingly, the Proponent shall be required to conduct a qualitative analysis of the potential pedestrian level wind impacts. KP 1

The objective of analysis shall be to evaluate the anticipated pedestrian wind conditions, specifically wind safety, on and around the Proposed Project site as well as identify any areas where wind velocities are expected to exceed acceptable levels, including the Boston Redevelopment Authority's (the "BRA") guideline of an effective wind gust velocity of 31 miles per hour (mph) not to be exceeded more than 1% of the time. The analysis shall determine the suitability of particular locations for various activities (walking, sitting, eating, etc.). The Proponent shall be required to pay particular attention to public and other areas of pedestrian use, including, but not limited to, entrances to the Proposed Project building and adjacent buildings, sidewalks adjacent to and in the vicinity of the Proposed Project building, and parks and plazas and other open spaces and pedestrian areas near the Proposed Project.

Measures to reduce wind speeds and to mitigate potential adverse impacts are required to be identified for areas that the analysis identifies as being dangerous or anticipated to exceed acceptable levels.

Shadow

The Proponent shall be required to conduct a shadow analysis for both existing and build conditions for the hours of 9:00 a.m., 12:00 noon, 3:00 p.m. for the vernal equinox (March 21), summer solstice (June 21), autumnal equinox (September 21), and winter solstice (December 21) and 6:00 p.m. in the summer and the fall. KP 2

The shadow impact analysis must include net shadow as well as existing shadow and must clearly show the anticipated incremental impact of the Proposed Project building. For purposes of clarity, new shadow should be shown in a dark, contrasting tone discernable from existing shadow. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the Proposed Project. The build condition(s) shall include all buildings under construction and any proposed building(s) expected to be completed prior to the completion of the Proposed Project. Shadow from all existing building(s) within the shadow impact study area shall be shown as well.

The Proponent shall be required to pay particular attention to existing and proposed open spaces and major pedestrian areas, including, but not limited to, the sidewalks adjacent to and in the vicinity of the Proposed Project and all existing plazas, park areas, pedestrian areas, and other open spaces in the vicinity of the Proposed Project. If deemed necessary, incorporate appropriate mitigation measures to limit or avoid adverse shadow impacts.

Daylight

(Please refer to Urban Design's comments)

Solar Glare

The Proponent has stated that the Proposed Project is not anticipated to include the use of reflective glass or other reflective materials on the building facades and thus shall not be required to conduct a solar glare analysis. However, should the decision be made to include the use of reflective glass or other reflective materials, the Proponent shall be required to conduct a solar glare analysis. KP 3

The analysis shall measure potential reflective glare from the buildings onto potentially affected streets and public open spaces and sidewalk areas in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. Mitigation measures to eliminate any adverse reflective glare shall be identified.

Air Quality

The Proponent has stated that an air quality analysis has been conducted to determine the impact of pollutant emissions from mobile sources generated by the Proposed Project. In particular, a microscale analysis was performed to evaluate the potential air quality

impacts of carbon monoxide (CO) resulting from traffic flow around the Project area. The results demonstrate that all predicted CO concentrations (at the studied intersections) are anticipated to be fall below the one-hour and eight-hour National Ambient Air Quality Standards.

The results further demonstrate that air quality in the vicinity of the Proposed Project site is good, with all local background concentrations found to be below the NAAQS. Further, the Proponent has demonstrated that the increased traffic in the area is not anticipated to create adverse air quality impacts.

Noise

The Proponent shall be required to conduct a noise analysis of the existing noise levels at the Proposed Project site as well as future noise levels, after the Proposed Project is completed. A description of the Proposed Project's mechanical system(s) and their location(s) shall also be included. KP 4

The Proponent shall be required to demonstrate compliance with the most stringent sound level limits set by the Massachusetts Department of Environmental Protection (DEP) Noise Policy, City of Boston Noise Regulations, and U.S. Housing and Urban Development's (HUD) Residential Site Acceptability Standards and if deemed necessary includes measures designed to minimize and/or eliminate adverse noise impacts on nearby sensitive receptors.

Sustainable Design/Green Buildings

(Please see the Interagency Green Building Committee ((IGBC)) Article 37 Comment Letter)

KATIE PEDERSEN, BOSTON PLANNING AND DEVELOPMENT AGENCY

KP 1 **Wind analysis.**

A qualitative wind study is included in Section 4.1.

KP 2 **Shadow analysis.**

A shadow analysis is included in Section 4.2.

KP 3 **Solar glare analysis.**

The Project does not propose the use of highly reflective glass. If reflective materials are proposed, a solar glare analysis will be completed.

KP 4 **Noise analysis.**

A noise analysis is included in Section 4.10.

Raul Duverge <raul.duverge@boston.gov>

Re: Scoping Determination Comments- 370-380 Harrison Ave, South End

1 message

Raul Duverge <raul.duverge@boston.gov> Tue, Sep 6, 2016 at 1:12 PM
To: Michael Cannizzo <michael.cannizzo@boston.gov>

Thanks Michael !

Sincerely,
Raul Duverge

On Sep 6, 2016, at 11:31 AM, Michael Cannizzo <michael.cannizzo@boston.gov> wrote:

Raul,
As far as comments on their submission these are comments regarding the Urban Design section.

The project for the most part complies with the zoning in the area and the goals of the Harrison Albany Plan. The area that it parts from the zoning and the plan is with respect to the proposed FAR of 8.0. Both zoning and the HA plan called for an FAR of 6.5. This ask for additional FAR is tied to project providing all of their 20% affordable units on site. This is an item that will require an amendment to the zoning for the area and will need further discussion on how to do this. With this in mind the proponent should submit an alternative project that fully complies with zoning. MC 1

The submission did not contain fully developed plans for the building. The building's exterior design for example is too literal in its interpretation of South End architecture. This portion of the South End - The New York Streets - has several new projects built recently that have advanced the idea of a South End building with new designs that speak of the time they were constructed and not be copies of the historic South End. The proponent should submit revised plans that has a design that continue the direction of new architecture that is of this time but still has the qualities of the older buildings found in the South End. MC 2

Let me know if you need anything else.
Michael

On Wed, Aug 31, 2016 at 5:05 PM, Raul Duverge <raul.duverge@boston.gov> wrote:
> Hello All,
>
> This is a friendly reminder to please submit comment letters for the scoping determination for the 370-380 Harrison Ave project by tomorrow, Thursday, September 1, 2016.
>
> On Thu, Aug 25, 2016 at 3:43 PM, Raul Duverge <raul.duverge@boston.gov> wrote:
> > Good Afternoon,

MICHAEL CANNIZZO, BOSTON PLANNING AND DEVELOPMENT AGENCY

MC 1 **Submit an alternative project that fully complies with zoning.**

Section 2.2.1 includes a description of an alternative that complies with an FAR of 6.5, which was the FAR allowed at the time of this comment.

MC 2 **The proponent should submit revised plans that has a design that continue the direction of new architecture that is of this time but still has the qualities of the older buildings found in the South End.**

Updated plans are provided in Chapters 2 and 6. Design of the Project has been refined to capture the residential feeling typified of the more modern residential buildings in the neighborhood, while influences of architecture in the South End neighborhood—the industrial influences of SOWA and Classical Revival influences throughout Boston—are preserved in the updated design.

BOSTON

Martin J. Walsh, Mayor

August 30, 2016

Ms. Teresa Polhemus
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 370-380 Harrison Avenue

Dear Ms. Polhemus;

The Boston Parks and Recreation Department (BPRD) submits the following comments for the proposed project at 370-380 Harrison Avenue in the South End.

BPRD is submitting this letter under Article 80 review, because the density and location of the project warrants evaluation for potential impacts to the City's existing open space and recreational areas. The project is approximately 585 feet from Peters Park so it will not be subject to further design review by the Boston Parks Commission under Section 7.4-11.

Project Description

The PNF describes a proposal for a mixed-use development with approximately 280 residential units. The PNF did not include the size of the units or the projected number of residents.

It is unclear what the zoning requirements are for onsite open space, or if this requirement will be met. The description of open space includes a wide sidewalk, a small courtyard, and a mid-block connector that will primarily provide access to the parking garage and drop off areas. BPRD 1

Open Space Needs

This project is a block from Peters Park, a heavily used neighborhood open space amenity. It is expected that the 280 households in this development will add demand on Peters Park - particularly for active uses, play spaces for children, and accommodations for dog owners.

This project is located in the South End which is already absorbing density due to the development of thousands of new residential units. That neighborhood is in need of significant open space in order to serve this growth. The City's *2015-2021 Open Space and Recreation Plan* explains that the South End is currently deficient in open space to serve its residents. All proposed development should specify how it will meet the needs expressed in that plan. BPRD 2

Boston Parks and Recreation Department
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: 617-635-4505 / Fax: 617-635-3173

Traffic Impacts

The traffic analysis for this project indicates that the intersection closest to Peters Park at East Berkeley and Washington Streets will deteriorate from a no build level of service of C to a built level of service of F during AM and PM peak hours. Efforts should be made to ensure that the project does not impact pedestrian, bicycle and vehicular access to Peters Park. BRPD 3

Mitigation

BPRD respectfully requests that any community benefits that are negotiated for the development should consider the mitigation of impacts to Peters Park as noted above. BPRD 4

Sincerely,

Carrie Marsh

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Christopher Cook, Commissioner, Boston Parks and Recreation Department
Liza Meyer, Chief Landscape Architect, Boston Parks and Recreation Department
Jonathan Greeley, Director of Development Review, Boston Redevelopment Authority
Raul Duverge, Project Manager, Boston Redevelopment Authority

BOSTON PARKS AND RECREATION DEPARTMENT

BPRD 1 **Zoning requirements are for onsite open space.**

There is no requirement for on-site open space, but there is a requirement applicable to lot coverage of a PDA. The Project has been designed in a manner so as to not only meet but exceed the lot coverage requirement applicable to PDAs set forth in Section 64-29 of the Code.

BPRD 2 **The City's *2015-2021 Open Space and Recreation Plan* explains that the South End is currently deficient in open space to serve its residents. All proposed development should specify how it will meet the needs expressed in that plan.**

The Proponent anticipates that on-site open space will be utilized for passive recreational uses, and has thoughtfully designed the Project's public realm programming to encourage those uses. Given the site's location and development constraints, there is no opportunity to create on-site active recreational facilities, and therefore, the Project will provide well maintained publicly accessible amenities including seating, lighting, landscaping, and trash receptacles, and will encourage residents and the community to make use of these amenities.

BPRD 3 **Efforts should be made to ensure that the Project does not impact pedestrian, bicycle and vehicular access to Peters Park.**

The Proponent does not anticipate the Project will have an impact on pedestrian, bicycle, or vehicular access to Peters Park.

BPRD 4 **Community benefits should consider the mitigation of impacts to Peters Park.**

The Proponent will work with the BPDA and community to determine appropriate mitigation.

9.3 Public Comments on PNF

BRENTON CLOTHING COMPANY, L.L.C.

393 Totten Pond Road
Suite 403
Waltham, MA 02451

telephone: (781) 609-2153
fax: (508) 960-2951
email: srose@zealandcorp.com

May 12, 2016

Sent by email and Fedex

Casey A. Hines
Senior Project Manager
Boston Redevelopment Authority
One City Hall Plaza, 9th floor
Boston, MA 02201

Re: 370 & 380 Harrison Avenue

Dear Ms. Hines:

We are the owners of the abutting property at 242 East Berkeley Street. It is our intention, if feasible, to upgrade and preserve the existing building and streetscape for use as affordable commercial, cultural and social enterprise space. Our future plans envision construction of an additional building rising maximum height above the rear parking lot and directly facing the proposed Related Beal ("RB") building with a possible cantilevering over and above our existing building. We trust RB will consider space planning within the section of their building facing our property for uses least affected by a new structure rising above our current site.

Building Height Issues

Related Beal ("RB") proposes building from 9 – 12 floors touching the wall of our existing 5 story building. Our structural engineer advises this will likely create significant snow drifts along the western side of our roof. The impact of the additional weight on the structural integrity of our roof is of concern and needs study. It is also unclear whether our roof drains can accommodate the increased snow melt. Our roof access is along the western wall. Snow drifting would make the hatch too heavy to open. The machine rooms for our elevators are on the roof close to the roof hatch and located in the anticipated snowdrift zone. Emergency access to elevator controls would be impeded. These problems could be resolved by RB designing appropriate space between our two buildings to accommodate falling snow. BCC 1

We suggest a lower height of 7 stories on the East Berkeley St. corner to make the proposed building a better transition and connection from both our building and to the many blocks of other 4 and 5 story historic buildings to the south along Harrison Avenue. The building could then rise to 17 or 18 stories on the Traveler Street corner to achieve the desired density. Shadows cast by this additional height should not impact neighbors since they should mostly fall on the Mass Pike and I 93. BCC 2

East Berkeley Street Improvements

We feel the streetscape between the Troy and the proposed RB building needs upgrading to integrate the pedestrian experience. It seems widening the sidewalk is not feasible. Our

suggestion is installation of old-fashioned gaslight style lampposts (think Beacon Hill!) along with thin trees appropriate for the existing sidewalk width. The RB electric room facing East Berkeley on the southeast corner of the building should be relocated so this small room can be repurposed to a glass walled, pedestrian attractive retail or cultural space. BCC 3

Proposed Mid-Block Connector

The vehicle egress onto East Berkeley Street will be blocked several times each week by trucks accessing our tailboard loading dock on East Berkeley. We have communicated a proposed solution to RB and look forward to further discussion on how to make our uses coexist. It is unclear how the myriad of activity in the proposed connector will be achieved and needs further clarification. The current design seems to create a passage that will be mostly used by cars and service vehicles. We suggest expanding the attraction of the connector with a dedicated bike/pedestrian lane. This would also allow bikes to connect between Traveler and East Berkeley without using the non-bike friendly routes of Albany or Harrison. To further enhance the pedestrian use of the connector we suggest creating a glass display window and door on the single story section of our building opening directly onto the connector in the event More Than Words occupies the first floor. This would provide both an additional retail entrance off the connector and create more pedestrian interest in using the connector. BCC 4 BCC 5 BCC 6

We have considered what decisions we can all make today that will constructively impact future safety for pedestrians and bikes along East Berkeley along with traffic reduction. The driveway exiting our parking lot onto East Berkeley combined with the exit driveway for the proposed RB building creates two blind driveways that bikes and pedestrians need to cross. Upon future construction of a multistory building over our parking lot we foresee developing below ground parking abutting the RB below ground parking. We can minimize future risk of pedestrian and bike accidents by having only one primary egress point onto East Berkeley for both our building and the RB building. This can be accomplished by RB granting us an easement to use the exit driveway onto East Berkeley connecting from the underground garage on our property. This would also ease traffic by limiting vehicle exit points into oncoming East Berkeley traffic. BCC 7

We understand that the Impact Advisory Group process will continue. Thank you for the opportunity to participate. We appreciate the efforts of your office in both nurturing this exciting new chapter of our neighborhood and attracting quality developers such as Related Beal.

Sincerely,

Stuart M. Rose
Manager

cc: David Chattman, Related Beal
Kim Sherman, Related Beal

BRENTON CLOTHING COMPANY, LLC, STUART M. ROSE, MANAGER

BCC 1 **Snow drifts along the western side of our roof.**

In response to community input, the proposed structure's height has been reduced to seven stories along the East Berkeley Street frontage.

BCC 2 **Lower height of 7 stories on the East Berkeley Street corner.**

In response to community input, the proposed structure's height has been reduced to seven stories along the East Berkeley Street frontage.

BCC 3 **Relocate the electric room facing East Berkeley Street on the southeast corner of the building so this small room can be repurposed to a glass walled, pedestrian attractive retail or cultural space.**

The proposed electric room has been redesigned to serve as an electric vault. This will allow additional flexibility in selecting facade treatments and will better integrate this critical infrastructure into the overall fenestration design.

BCC 4 **The vehicle egress onto East Berkeley Street will be blocked several times each week by trucks accessing the tailboard loading dock on East Berkeley Street.**

The Proponent has reviewed the conditions along East Berkeley Street and believes there is adequate space along East Berkeley Street to accommodate delivery and loading operations under the proposed egress alignment. The Proponent is available to discuss this and other Project-related matters with abutters and the community.

BCC 5 **Suggest expanding the attraction of the connector with a dedicated bike/pedestrian lane.**

The Mid-block Connector has been designed to be capable of safely accommodating bicycle and pedestrian uses.

BCC 6 **Suggest creating a glass display window and door on the single story section of our building opening directly onto the connector in the event More Than Words occupies the first floor.**

High quality materials have been selected for the Mid-block Connector, and landscaping and lighting will create a comfortable and inviting pedestrian experience. The building code prohibits the placement of window openings, such as the suggested display window, along shared property lines.

BCC 7 **Easement to use the exit driveway on the Project Site.**

The Project team is designing the egress to minimize impacts to pedestrians and bicyclists to the maximum extent practical, and will continue to evaluate all feasible options to ensure safety of those passing the site.

MORE THAN WORDS

Empowering Youth to Take Charge of Their Lives by Taking Charge of a Business

TO Whom it may concern, 4·27·16

We are your future next door neighbors on the second floor of 242 East Berkely Street. We would like to welcome you into the community and we are excited for the upcoming changes happening in your space. At More Than Words, we empower youth to take charge of their lives by taking charge of a business, an online and retail book store. We go into the community collecting over 2 million book donations to add to our inventory and to ship internationally, our business also helps us to develop personal goals in education, employment, and self-efficacy to move our lives in a positive direction. We hope that you keep us in mind while you are re-building your new space as we are also planning to grow in many ways - more business, more revenue, and more youth! We MTW invite you to bring more of your staff to tour More Than Words to better understand what we do and how important this location in the South End is to us. We are looking forward to expanding together.

Sincerely,

Damiyan, Yve, and the More Than Words Team

More Than Words Bookstore & Café
376 Moody Street
Waltham, MA 02453

www.MTWyouth.org
781-788-0035

More Than Words Warehouse Bookstore
242 E. Berkeley Street
Boston, MA 02118

MORE THAN WORDS

242 E. Berkeley Street, 2nd Floor• Boston, MA 02118• 781-788-0085
E-Mail: Jodi@mtwyouth.org Web: https://www.mtwyouth.org/

May 12, 2016

Casey Ann Hines
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201
617-918-4244

Re: 370-380 Harrison Avenue

Dear Ms. Hines:

On behalf of More Than Words staff and youth, we appreciate the opportunity to comment on the proposed redevelopment of 370-380 Harrison Avenue in Boston's South End. During the past six weeks, we have reviewed the Project Notification Form and proposed design for the future of our neighboring site. We are excited for the coming changes and improvements in our neighborhood, which we believe will help drive foot traffic and earned revenue to our youth-run social enterprise book businesses. We support the increased densification and proposed mix of commercial and residential uses for the former Quinzani's site.

As a business tenant at 242 E. Berkeley Street and direct abutter to this development, we welcome ongoing dialogue about the physical aspects of the project, as those plans progress in the coming months. We would like to take this opportunity to comment on several *less visible* issues that are of vital importance to our business, our mission, and our shared E. Berkeley Street block.

Background

Since 2011, our organization More Than Words has called the 2nd floor of 242 E. Berkeley Street home. In our South End "home," we employ and empower over *200 youth annually* to take charge of their lives by taking charge of a business. The youth who come to More Than Words are in foster care, court-involved, homeless or out of school. At More Than Words, these youth are challenged with professional responsibilities in an authentic business setting: operating an online and retail book business. MTW Youth are given high expectations and a culture of support from our staff of twenty professionals, all of whom work from our South End location.

Our youth process *two million donated books annually* and sell one million (~$900,000 in earned revenues) through our online business and retail store. But their job at More Than Words extends beyond books: in the face of compounding risk factors, our youth address personal barriers to success, create concrete action plans for their lives, and become contributing members of society--all on the 2nd floor of 242 E. Berkeley Street.

Our location on the 2nd floor of 242 E. Berkeley Street is no accident. It is a near-perfect, central location in the greater Boston metro area. Youth can easily self-transport to this location via public transportation and our neighborhood is deemed to be a neutral territory for youth who may have had any gang-involvement. Many of our youth attend school during the day, and are able to work evening and weekend shifts in this location due to its accessibility, short commute, and convenience.

When South End residents, new neighbors, and other customers discover our social enterprise bookstore and meet our youth associates, they see we are not only a job hub, but also a place where youth come to *radically change their lives.* It is against this backdrop that we urge the BRA, Related-Beal, and City agencies to thoughtfully consider our youth—who are all too often overlooked—*as a vital stakeholder in this neighborhood and planning process.*

As the direct abutter of 370-380 Harrison Avenue, we wish to offer some additional information regarding the present and predicted conditions of our site and of More Than Words:

More Than Words is growing. With the help of many Boston leaders and stakeholders, we have spent over a year mapping the potential to expand our book businesses, increase our visibility in the community, serve more youth, and grow our mission. We believe that our location at 242 E. Berkeley Street can serve all of these purposes, and that we are uniquely positioned, as a social enterprise, to be relevant to all of those around us in this changing community. We are actively growing and expanding our book businesses to keep pace with a growing customer base and the rising costs of operating a business in the South End. Our landlord, Stuart Rose, has worked with us not only to remain in this location, but has encouraged us to consider new retail space on the first floor for our growing book businesses.

Our growth will be visible. A casual passerby might not notice the 2nd floor More Than Words bookstore and reading room among a host of highly visible, new neighborhood assets—several high-end residential developments and significant commercial reinvestment in a formerly industrial area of the South End. We anticipate that the resulting increases in commercial activity and foot traffic will benefit our retail book business and grow our local customer base.

However, we have already experienced some of the challenges of running a business in a rapidly growing residential community, including resident complaints about the presence of our trucks in existing loading zones on E. Berkeley Street. As we employ more youth, process more book donations, and ramp up our online operations, we will load more trucks along E. Berkeley Street. Although this loading is currently permitted, we are concerned that future neighbors will resist this type of operation due to traffic, which could jeopardize not only our business operations, but the ability of our youth to work. It is also damaging for the More Than Words brand if we anger residents and potential customers by parking our box trucks in a loading zone that is experiencing more through traffic than ever before.

We urge the BRA, Related Beal and its design partners to thoughtfully consider the existing circulation and loading on E. Berkeley Street and to craft a plan that works for all of our uses—both residential and commercial. We have developed a preliminary plan concerning our growth at this location and projected loading needs for the future. We ask the BRA and Related-Beal review our initial plans and to open an ongoing dialogue to address issues as part of their design and Article 80 review process. MTW 2

For us, the stakes could not be higher. We have invested significant time and resources into developing a viable strategy to grow our business, model, and impact. We are working with city agencies to bring more job-ready youth to More Than Words and offer them real options and support in changing their lives. All of this depends on our ability to operate our book business in predictable ways—to continue to create authentic training and job experiences for our youth and help them transition to the job market.

<u>Request for Mitigation</u>

The redevelopment of 370-380 Harrison Avenue will disrupt our growing book business operations and youth development in both expected and unexpected ways, including noise and construction-related traffic. On behalf of the youth we serve now, those who will come here during the construction period, and our customers who enjoy our bookstore and reading room spaces, we seek assistance with the following:

Existing Condition: Currently, our youth load trucks of books 2-3 times a day at a tailboard loading dock on the far west end of our building along E. Berkeley Street. If 370-380 Harrison were built today, the front of our box trucks would completely block the E. Berkeley Street exit on the proposed site.

Concern: Based on the preliminary designs for 370-380 Harrison Ave., we are very concerned about our ability to operate our book businesses at 242 E. Berkeley Street in the future. As one of the longest standing businesses on this block, we are already dealing with a complicated set of loading and circulation issues inherent in layering of former New York Streets and urban renewal grid patterns which eliminated service throughways over time. This is compounded by neighborhood complaints about loading and unloading on E. Berkeley Street. These circulation and loading issues will not be made easier as new businesses and residences open nearby; it is a burden shared by everyone--residents, businesses, and those traveling through the South End. MTW 3

Request: We request that Related Beal and its design partners work with More Than Words to redesign the proposed service through-way on east side of the 370-380 Harrison site to *intentionally include our business a user of their proposed service throughway.* The proposed throughway could be adapted to accommodate our small box trucks and give them access for loading and unloading in a dedicated area between our sites, instead of along E. Berkeley Street. We would welcome the opportunity to work with Related Beal, Howard Stern Hudson, Utile, and any other engineers and designers to look more holistically at how this service throughway can help internalize loading circulation. We believe this is a one-time opportunity to improve circulation for the entire block, to the benefit of future residents and businesses. MTW 4

As we grow our youth-run businesses, we expect to collect more book donations and ship more book. We have an opportunity *now* to design a circulation plan that considers the inherited challenges of our neighboring sites. We see great potential in the proposed design for sharing the service throughway between our site and 370-380 Harrison. The circulation on this particular block of E. Berkeley could be drastically improved with shared access and service circulation that is internalized between our two sites, rather than trucks blocking an entire lane for loading (a lane already shared with a bus stop, bicyclists, and turning vehicles). We believe that there will be few other options available once this 370-380 Harrison development is built, and urge the city to consider the long-term vision for E. Berkeley Street now, as the largest parcel on the block is redeveloped. MTW 5

As part of the design process, please consider creating a fund to improve the pedestrian experience along 242 E. Berkeley Street. This could include adding porous surfaces and shade trees, widening of the sidewalk, and giving similar treatment to the pedestrian experience as has been done for our neighboring sites, The Troy and the proposed 370-380 Harrison Avenue. However, the timing of these improvements is critical--visibility and pedestrian access are key to our operations and revenues. As such, we request that all improvements to the sidewalk be made as soon as possible and at latest, the beginning of the 370-380 Harrison Avenue construction process.

Lastly, given the current status of the 370-380 Harrison design process, we request that the IAG or comparable entity continue to meet throughout the development process and serve as a platform for us and others in the community to raise concerns. MTW 6

Thank you for your consideration of our youth and our growing businesses at 242 E. Berkeley Street. We hope you can be part of an enduring solution to create jobs and opportunities for our youth in the South End, to ensure that our youth do matter and add value to this city through their work.

Sincerely,

More Than Words

MORE THAN WORDS

MTW 1 **Invitation to tour More Than Words.**

The Proponent is committed to continued coordination and communication with abutters and other interested parties to address Project-related impacts. The Proponent is available to discuss the Project and looks forward to further communication with the community and More Than Words staff as the Project advances.

MTW 2 **Consider the existing circulation and loading on East Berkeley Street and to craft a plan that works for all of our uses-both residential and commercial.**

The Proponent has thoughtfully designed the Project to efficiently accommodate current and future neighborhood and site uses, including vehicle movements and operations. The Proponent is confident that circulation patterns and loading operations along the East Berkeley Street corridor will continue in conformance with the City's requirements and standards.

MTW 3 **Loading and unloading on East Berkeley Street.**

The Proponent has designed the Project so that delivery and loading operations are conducted on the interior of the Project Site, along the Mid-block Connector, so that loading and unloading impacts are mitigated. The Proponent believes that Project-related delivery and loading operations will not contribute to existing neighborhood concerns on this issue.

MTW 4 **Redesign the proposed service through-way on the east side of the Project site to intentionally include our business as a user of their proposed service throughway.**

The Proponent is committed to continued coordination and communication with abutters and believes that the current design of the Mid-block Connector provides a level of functionality that will be of substantial benefit to the Project Site and abutting parcels.

MTW 5 **Provide shared access and service circulation that is internalized to the Project site and adjacent site.**

The Proponent will ensure that vehicle circulation will be adequately accommodated under the proposed plan.

MTW 6 **Request that the IAG or comparable entity continue to meet throughout the development process and serve as a platform for us and others in the community to raise concerns.**

The Proponent is committed to working with abutters and other interested parties to address Project-related impacts and is willing to meet on a regular basis to discuss such issues. During the construction phase of the Project, the Proponent will provide the name, telephone number and address of a contact person to communicate with on issues related to the construction. The construction contact will be a person responsible for responding to the questions, comments, and/or complaints from residents and businesses in the neighborhood.

NEPTUNE GARMENT COMPANY
242 E. Berkeley Street
Boston, Massachusetts 02118

(617) 482-3980 Fax (617) 423-5571
nepgarment@aol.com

Ms. Casey Hines
Boston Redevelopment Authority
One City hall Square 9th Floor
Boston, Mass. 02201

Dear Ms. Hines,

I have recently been notified of the extensive work being done next door to our business/ factory location at the corner of East Berkeley St. and Harrison Avenue in the South end of Boston. We are very, very concerned about business interruptions, distractions such as noise, very loud vibrations, accessibility to our loading dock facing out on East Berkeley st. Our Freight elevator which we use for inside production and all Shipments going in and out of the business directly abuts the site being constructed with NO Buffer zone. NGC 1

Neptune Garment co. has been at this location for almost 70 years. We are the LAST garment factory in the Old garment district of Boston, We run a very, very tight operation as we are competing with Mississippi, Puerto Rico, Mexico and even China on some items. We are a completely vertical manufacturer as we bring in all textiles and make everything right in our south end location. We are prime suppliers to the US Navy (I am also a Navy Veteran) , US Army, USMC, US Airforce, US Postal service and Many Military schools such as Annapolis, West Point, USAF Academy and many other schools. I employ about 100 people who are very dependent on me bringing the business to Neptune and keeping them all employed. I would appreciate any help or advice on how to deal with and/or prepare ourselves for this impending situation that could do severe damage to my business and its employees, thank you for your time. PS. we also do the 1813 Circa uniforms for the USS Consititution (OLD IRONSIDES) docked at the Charlestown Navy yard. NGC 1

Sincerely,

John F. Kindregan

President

NEPTUNE GARMENT COMPANY, JOHN F. KINDREGAN, PRESIDENT

NGC 1 **Concerned about business interruptions, distractions such as noise, very loud vibrations, accessibility to our loading dock facing out on East Berkeley Street.**

The Proponent is committed to working with abutters and interested parties to address Project-related questions and concerns. During construction, a contact person will be responsible for responding to the questions, comments, and/or complaints from residents and businesses in the neighborhood.

NGC 2 **Help or advice on how to deal with and/or prepare for the impending construction and operation of the Project.**

As noted above, the Proponent is available to discuss the Project and is willing to work with abutters and other interested parties to address any questions of concerns they may have. Construction impacts and mitigation are described in Section 4.11. A Construction Management Plan will be submitted to BTD for review and approval prior to issuance of a Building Permit. The CMP will include detailed information on specific construction mitigation measures and construction methodologies to minimize impacts to abutters and the local community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

OLD DOVER
NEIGHBORHOOD ASSOCIATION

May 11, 2016

Casey Hines
Boston Redevelopment Authority
One City Hall, 9th Floor
Boston, MA 02201

Dear Casey:

At the May 3 meeting of the Old Dover Neighborhood Association, we held a discussion among our membership lead by members who sit on the IAG for the 370-380 Harrison Ave project. We understand that a public meeting has been held, but the developer has not yet had the opportunity to present the project at an Old Dover meeting. We expect they will, and will invite them to our next meeting.

Nonetheless, Old Dover wishes to submit a comment letter by the deadline to provide some broad feedback, with the expectation that continued communication between the developer, the community, and the BRA will take place.

Old Dover responded positively to the plans to redevelop the property. By vote of members in attendance at the May 3 association meeting, with regard to this project, the association would like to provide the following comments and provisos.

The community is excited to have a developer of the caliber of Related Beal take on a project in our neighborhood. Great things are anticipated given their stellar reputation.

We understand from our members serving on the IAG that the developer is taking the input of the community very seriously, something we support and anticipate will continue.

The project's mid-block connector seems to have a multitude of uses (service, garage entry and egress, green space, pedestrian way, building entrance); there are questions about the details, and whether or not the execution will be feasible. We advocate for a more thorough vetting of this vital project component. ODNA 1

Concern has been raised that the proposed parking ratio of .64 may not be sufficient. Despite the city's mandated minimums, there continues to be evidence within the community that projects never have enough on-site parking to meet demand. ODNA 2

The community advocates for public realm improvements and enhanced visual experience along the project's perimeter and beyond: ODNA 3

- Harrison Avenue: wide sidewalks, tree plantings, period lighting, and the proposed pocket park;
- East Berkeley St: wide sidewalks at the project's edges, plus an extension of the project's plantings and period lighting to bridge the connection to the Troy building without leaving a gap;
- Traveler St: steps must be taken to enliven this block with retail, support of pedestrian use, bike traffic, and the fulfillment of the vision for a "green corridor" which continues to be mentioned. Some place-making at the intersection of Traveler St and Harrison Ave should be explored.

The community strongly supports the implementation and accommodation of alternative modes of transportation, namely bike lanes to bridge the connection between South Boston (and the South Bay Harbor Trail) with the South End and beyond to the Back Bay. An inbound bike lane at this project's southern edge (East Berkeley St) must be part of the planning, and should ideally include some form of protective barrier for cyclists. Likewise, an outbound bike lane at the project's northern edge (Traveler St) must be pursued, to connect to the Harbor Trail and South Boston. ODNA 4

The community has also expressed great concern about traffic congestion at the project's southern edge, along East Berkeley Street, as it crosses Harrison Avenue and approaches Washington Street. This westbound traffic compresses from three lanes to one lane on East Berkeley, a problem which has been identified to the city in the past. This problem has been exacerbated by each of the numerous new developments in the surrounding area, and this project represents another contributing factor to an already intolerable traffic issue. The city must address traffic impact by solving the problem of the "lane closure" that exists on this one-block stretch of East Berkeley Street. ODNA 5

While slightly premature to have a final comprehensive list of community benefit earmarks, Old Dover has within the past 12 months come to identify the infrastructure of Peters Park to be in great need. As such, the overall needs of the Park must be considered as a recipient of funding from new developments. Peters Park serves a diverse cross-section of residents from immediate abutters to those to travel from the outside to use its varied amenities. Its maintenance requirements continue to outpace Parks Department resources. New developments bring new residents who will be welcomed into the park, but who will further tap its fragile infrastructure. Old Dover therefore advocates a logical and appropriate placement of the park at the top of the list for consideration of community benefits funds. ODNA 6

In addition, the project's impact on its closest abutters must be reflected in its mitigation planning. The impact on the adjoining property, 242 East Berkeley, and its occupants, will require a commitment to cooperation and accommodation to address such impact. Likewise any ancillary impact on nearby properties, across from the project, must be considered and accommodated. Old Dover expects the developer to act responsibly in these regards and looks forward to staying engaged as a vital part of the community process. ODNA 7

We understand the IAG and public meetings will continue, and we thank the developer and the BRA for our inclusion in discussions going forward. If we can provide any further information, do not hesitate to contact us at info@olddover.org.

Sincerely,

Ken Smith
President
Old Dover Neighborhood Association

cc: David Chattman, Andrew Heyes, Related Beal
Sam Chambers
Councilor Bill Linehan

OLD DOVER NEIGHBORHOOD ASSOCIATION

ODNA 1 Mid-block Connector.

Since the initial filing, the design and functionality of the Mid-block Connector has been further developed and refined. The Proponent will continue to work with the BPDA and other interested parties to ensure that the Mid-block Connector functions as intended. The design team will continue to undertake all efforts necessary to make sure that final design plans will allow for the effective and efficient use of this space.

ODNA 2 Amount of parking.

The proposed parking supply of 0.56 spaces per unit is consistent with the development patterns for the immediate area and is also consistent with the U.S. Census data for vehicle ownership patterns throughout the immediate area. The nearby Ink Block project is providing a parking ratio of approximately 0.58 parking spaces per residential unit, and the proposed redevelopment of 345 Harrison Avenue is providing a parking ratio of approximately 0.47 parking spaces per unit.

The United States Census Bureau data, provided in Appendix E, indicates that within the census tracts containing and surrounding the site, approximately 79 percent of all home ownership units have a vehicle and 43 percent of all rental units have a vehicle. Based on this data and the proposed development program of approximately 232 rental units and 92 ownership units, the parking ratio that has been proposed for the Project will meet the parking demands of the Project with no adverse impact to the on-street parking supply surrounding the site.

ODNA 3 The community advocates for public realm improvements and enhanced visual experience along the Project's perimeter and beyond:

- **Harrison Avenue: wide sidewalks, tree plantings, period lighting, and the proposed pocket park;**

The public realm along Harrison Avenue is proposed to be a wide sidewalk with a row of trees, pedestrian lighting, bicycle racks and possible locations for outdoor seating. Active ground level uses will front onto Harrison Avenue to enliven the streetscape. The courtyard that was previously proposed to be located mid-block along Harrison Avenue has been expanded into the Courtyard Passageway, connecting Harrison Avenue to the Mid-block Connecter and onto Traveler Street. While much of the Courtyard Passageway will be covered, it will be enlivened with planting, seating and decorative lighting to enhance the visual and spatial experience.

- **East Berkeley Street: wide sidewalks at the Project's edges, plus an extension of the Project's plantings and period lighting to bridge the connection to the Troy building without leaving a gap;**

  The improved pedestrian streetscape for East Berkeley Street will be similar in character to the neighboring parcel through the incorporation of pedestrian scale lighting, planting, permeable paving, tree grates and structural soil.

- **Traveler Street: steps must be taken to enliven this block.**

  The streetscape along Traveler Street is proposed to include a wide planted zone, street trees and pedestrian scale lighting, reflective of both the location along the Green Corridor and in character with the streetscape of the Troy. Active ground-level uses will line the building edge along the street and multiple locations for bicycle parking will be provided. In lieu of place-making at the corner of Traveler Street and Harrison Avenue, the Courtyard Passageway has been introduced to connect the pedestrian desire line from the south on Harrison Avenue to the path to the Red Line MBTA station on Traveler Street/West Fourth Street. The Courtyard Passageway will be enhanced with seating, planting and decorative lighting.

ODNA 4 **Inbound bike lane along East Berkeley Street and an outbound bike lane on Traveler Street, to connect to the Harbor Trail and South Boston.**

The Proponent is working with BTD to determine the most appropriate off-site mitigation measures to address existing issues and to accommodate Project-related traffic. The Proponent will continue to work closely with BTD to implement any specific off-site mitigation, such as new bicycle lanes, as part of the ongoing permitting process.

ODNA 5 **Traffic congestion at the Project's southern edge, along East Berkeley Street, as it crosses Harrison Avenue and approaches Washington Street.**

The traffic study presented in the PNF identified the existing traffic congestion at the intersection of Harrison Avenue/East Berkeley Street. Currently, there are plans to reconstruct Harrison Avenue between Herald Street and East Berkeley Street; implement a two-way section of Traveler Street between Washington Street and Harrison Avenue; and implement a two-way section of Washington Street between Herald Street and East Berkeley Street. These roadway improvements are currently in various stages of design and are intended to alleviate traffic congestion throughout the area. As part of these modifications to the roadway network, all traffic signals will be upgraded and the signal timing/phasing will be optimized to provide more efficient operations.

As new development occurs in the area, the transportation infrastructure will be reevaluated and upgraded/modified when and where necessary to meet the increased traffic demands.

ODNA 6 **Community benefit funds for Peters Park.**

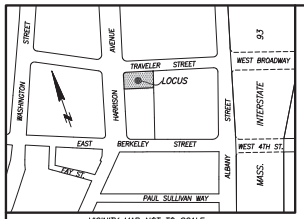
The Proponent will work with the BPDA and community to determine appropriate mitigation.

ODNA 7 **Impacts on the adjoining property, 242 East Berkeley, and its occupants.**

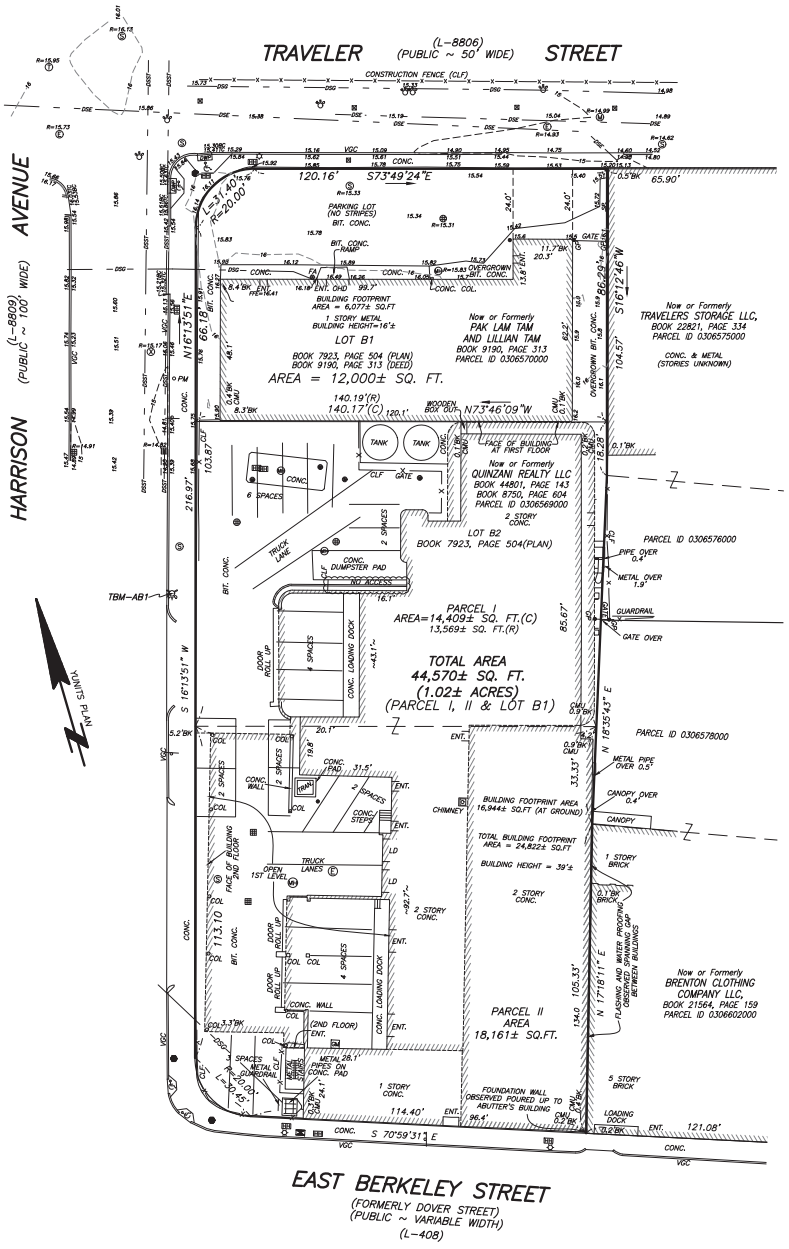
The Proponent is committed to working with abutters and other interested parties to address Project-related impacts. The Proponent will work with the BPDA and community to determine appropriate mitigation.

Appendix A

Site Survey



VICINITY MAP NOT TO SCALE



LEGEND

- E ..... ELECTRIC MANHOLE
- S ..... SEWER MANHOLE
- M ..... MANHOLE
- T ..... TELEPHONE MANHOLE
- MBTA ..... MBTA MANHOLE
- X ..... STEAM MANHOLE
- ..... CATCH BASIN
- ..... ROUND CATCH BASIN
- ..... WATER SHUT OFF/WATER GATE
- ..... GAS SHUT OFF/GAS GATE
- ..... BOSTON WATER VALVE
- ..... HYDRANT
- FA ..... FIRE ALARM
- ..... TRAFFIC SIGNAL
- ..... LIGHT POLE
- ..... ELECTRIC HANDHOLE
- ..... BOLLARD
- ..... SIGN
- GP ..... GATE POST
- ..... OBSERVATION WELL
- DWP ..... DETECTABLE WARNING PAD
- HP ..... HANDICAP RAMP
- BC ..... BOTTOM OF CURB
- CMU ..... CONC. MASONRY UNIT
- CLF ..... CHAIN LINK FENCE
- CONC ..... CONCRETE
- BIT ..... BITUMINOUS
- COL ..... COLUMN
- ENT ..... ENTRANCE
- L= ..... LENGTH
- N/F ..... NOW OR FORMERLY
- OHD ..... OVERHEAD DOOR
- R= ..... RADIUS OR RIM ELEVATION
- SQ. FT. ..... SQUARE FEET
- TBM ..... TEMPORARY BENCH MARK
- TC ..... TOP OF CURB
- VGC ..... VERTICAL GRANITE CURB
- (C) ..... CALCULATED
- (R) ..... RECORD
- DSE ..... DIGSAFE ELECTRIC
- DSG ..... DIGSAFE GAS
- DSST ..... DIGSAFE STEAM

PLAN REFERENCES

COUNTY REGISTRY OF DEEDS
- PLAN BOOK 1017 PLAN 263
- PLAN BOOK 6244 PLAN 567
- PLAN BOOK 7079 PLAN 503
- PLAN BOOK 7263 PLAN 345
- PLAN BOOK 7861 PLAN 84
- PLAN BOOK 7923 PLAN 504

MASSACHUSETTS LAND COURT
- LCC 20551A (WITHDRAWN FROM REGISTRATION)

CITY OF BOSTON ENGINEERING DEPARTMENT FIELD BOOK PAGE
- PLAN NO. L-150
- PLAN NO. L-260
- PLAN NO. L-408
- PLAN NO. L-625
- PLAN NO. L-8806
- PLAN NO. L-8807
- PLAN NO. L-8809

STREET LINE MAP, SOUTH END PROJECT R-56, BOSTON REDEVELOPMENT AUTHORITY, DATED AUGUST 26, 1968, REVISED OCTOBER 25, 1968.

NOTES:

1) BENCH MARK INFORMATION:

BENCH MARK USED: RIGHT OUTER CORNER LOWER STONE STEP OF NO. 463 BOYLSTON STREET.
ELEVATION = 19.19 (BOSTON CITY BASE).

TEMPORARY BENCH MARKS USED (FELDMAN JOB#12985A):
TBM-11: X-CUT 2.4' ABOVE GRADE ON LEFT BOLT OVER MAIN OUTLET OF HYDRANT LOCATED AT EASTERLY SIDE OF WASHINGTON STREET.
ELEVATION = 19.15

TBM-12: X-CUT 2.1' ABOVE GRADE ON LEFT BOLT OVER MAIN OUTLET OF HYDRANT LOCATED AT EASTERLY SIDE OF WASHINGTON STREET.
ELEVATION = 18.30

TEMPORARY BENCH MARKS SET:
TBM-AB1: X-CUT 2.3' ABOVE GRADE ON LEFT BOLT OVER MAIN OUTLET OF HYDRANT LOCATED AT THE EASTERLY SIDE OF HARRISON AVENUE, AS SHOWN HEREON.
ELEVATION = 17.98

TBM-AB2: X-CUT 2.0' ABOVE GRADE ON LEFT BOLT OVER MAIN OUTLET OF HYDRANT LOCATED AT 350 HARRISON AVENUE.
ELEVATION = 18.88

2) ELEVATIONS REFER TO BOSTON CITY BASE.

3) CONTOUR INTERVAL EQUALS ONE (1) FOOT.

EXHIBIT PLAN
370 & 380 HARRISON AVENUE
BOSTON, MASS.

FELDMAN LAND SURVEYORS
112 SHAWMUT AVENUE
BOSTON, MASS. 02118
PHONE: (617)357-9740
www.feldmansurveyors.com

MARCH 28, 2016

FELDMAN LAND SURVEYORS

20 0 10 20 40 80

SCALE: 1"=20'

RESEARCH JBD	FIELD CHIEF AB	PROJ MGR DJR	APPROVED	SHEET NO. 1 OF 1
CALC JBD	CADD DCH/MGC	FIELD CHECKED	CRD FILE 14803	JOB NO. 14451A

FILENAME: S:\PROJECTS\14400's\14451\DWG\14451A-EXBT.dwg

Appendix B

Preliminary Energy Model Memo

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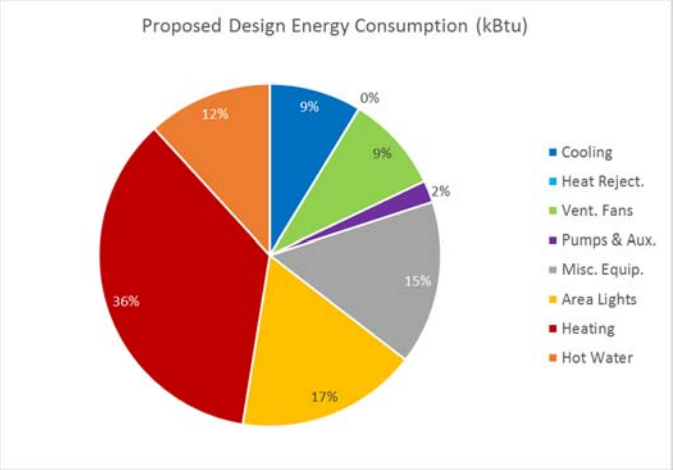
SCHEMATIC DESIGN ENERGY MODELING MEMO

To:	Brent Bentson, Paul Miller, Utile Design
From:	Luka Matutinovic, WSP | Parsons Brinckerhoff
Date:	October 19, 2016
Project Name:	370 – 380 Harrison Avenue
Reference Number:	B1605813.000

The purpose of this memo is to present the modeled energy performance of the 370-380 Harrison Avenue project with respect to the Massachusetts "Stretch" Energy Code compliance and LEED 2009.

To comply with the latest Massachusetts Stretch Energy Code, the proposed design must acheive 10% energy consumption better relatiove to ASHRAE 90.1-2013. To comply with the minimum energy requirements of LEED 2009, the design must achieve 18% energy cost savings relative to ASHRAE 90.1-2007. As can be seen in the tables below, **the current design achieves the minimum requirements of both the MA Stretch Energy and LEED 2009. Due to design uncertainty, the final results may differ by as much as 10% from this report.** [1]



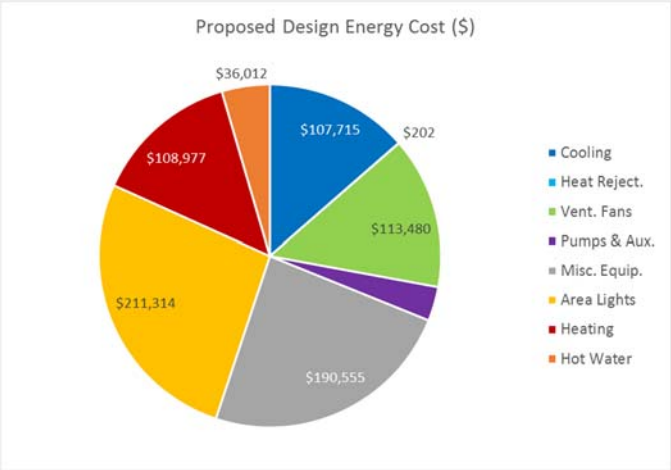


Table 1: Site Energy Consumption and Energy Cost Savings

	ASHRAE 90.1-2013 Baseline	Proposed	Site Energy Savings
Energy Consumption (MMBtu)	36,276	26,336	**27%**
	ASHRAE 90.1-2007 Baseline	**Proposed**	**Site Energy Cost Savings**
Site Energy Cost ($)	$1,066,967	$792,600	**26%**

[1] Energy Modeling Intent and Limitations: The energy modeling process is intended to provide a comparison of annual energy use and cost among multiple designs. These results are not predictive of actual utility bills. Actual energy use may differ from the simulation results due to variations in occupancy, controls and maintenance, weather, changes in energy rates, and the general precision of the simulation program.Schematic Design phase results typically carry a range of 5-10%

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The following figures are an estimate of the current energy savings and energy cost savings based on the most current design documents. As the design is in progress, these results are subject to change until the final models are complete with full documentation. A summary of the annual energy savings and modeling assumptions is included below.

Figure 3: Energy Consumption Savings vs ASHRAE 90.1-2013

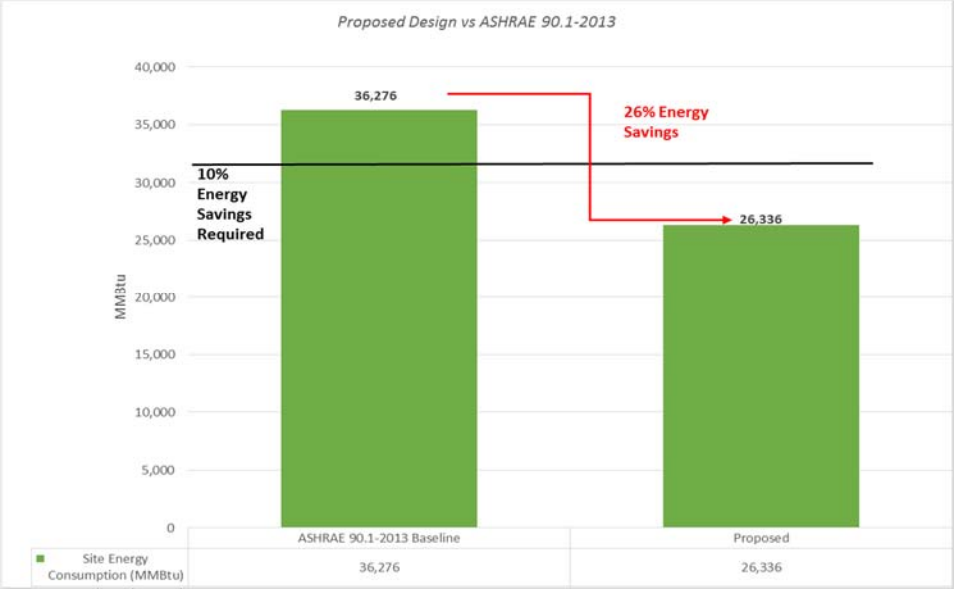
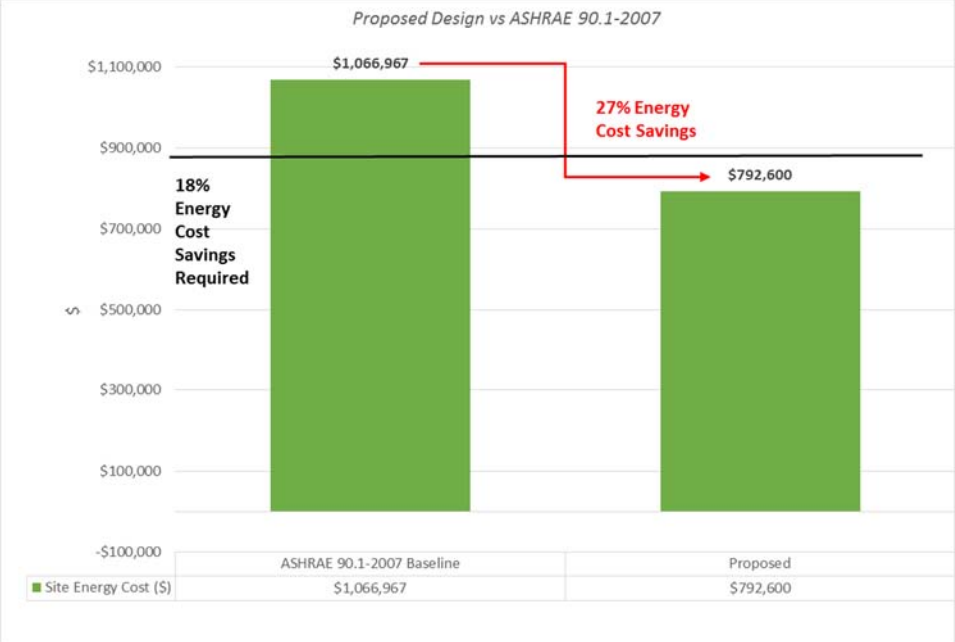


Figure 4: Energy Cost Savings vs ASHRAE 90.1-2007



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SUMMARY OF INPUTS AND ASSUMPTIONS

Summary of Assumptions for Energy Model	ASHRAE 90.1-2007 Baseline	ASHRAE 90.1-2013 Baseline	Design
General Building Information			
Space use type	Residential	Residential	Residential
Conditioned Square Feet	510,078 SF	510,078 SF	510,078 SF
Operating Schedule (HVAC Fans)	24 / 7 / 365	24 / 7 / 365	24 / 7 / 365
Temperature Setpoints	Cooling - Occupied : 75 Heating - Occupied : 70	Cooling - Occupied : 75 Heating - Occupied : 70	Cooling - Occupied : 75 Heating - Occupied : 70
Building Envelope (Construction Assemblies)			
Roofs	R20ci Above Deck (U-0.048)	R30ci Above Deck (U-0.032)	R20ci Above Deck (U-0.048)
Walls	Steel Framed (U-0.064)	Steel Framed (U-0.055)	Masonry (U-0.050) Spandrel (U-0.200) Weighted Average (U-0.125)
Fenestration and Shading			
Vertical fenestration area (of Wall area)	**40%**	**40%**	**46%**
Vertical Glazing U-factor	U-0.45 (curtain wall)	U-0.50 (operable)	U-0.39
Vertical Glazing SHGC	0.4	0.4	0.4
HVAC (Air-side)			
HVAC System Type	Packaged VAV Rooftop Unit With HW Reheat - System per Floor. Packaged Terminal A/C Units - for residential units	Packaged VAV Rooftop Unit With HW Reheat - System per Floor. Packaged Terminal A/C Units - for residential units	(1) 100% Outside Air Packaged Rooftop Units Bulldog Hybrid Heat Pumps serving residential units
Unitary Efficiency	**PTAC: 9.3 EER**	**PTAC: 12.2 EER**	**ERU DX cooling: 14.0 EER** **ERU Heat Pump Heating: 4.5 COP** **WSHP Cooling: 10.0 EER**
Fan System Operation	On continuously during occupied hours. Cycled to meet load during unoccupied hours.	On continuously during occupied hours. Cycled to meet load during unoccupied hours.	On continuously during occupied hours. Cycled to meet load during unoccupied hours.
Outdoor Air Design Min. Ventilation	37,288 CFM	37,288 CFM	37,288 CFM
Economizer High-Limit Shutoff	Outdoor Air Temperature with 70F shutoff limit	Outdoor Air Temperature with 70F shutoff limit	**None**
Design Airflow Rates (Conditioned Spaces)	Autosized based on 20F supply air to room air delta-T	Autosized based on 20F supply air to room air delta-T	Autosized based on 20F supply air to room air delta-T

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Total System Fan Power (Conditioned)	VAV: 0.001560 kW/cfm PTAC: 0.0003 kW/cfm	VAV: 0.001560 kW/cfm PTAC: 0.0003 kW/cfm	DOAS: 0.001560 kW/cfm Bulldog Heat Pump: 0.0002 kW/cfm
Exhaust Air Energy Recovery	**None**	**50% effective enthalpy wheel on all VAV Systems**	**68% effective enthalpy wheel**
Demand Control Ventilation	N/A	N/A	N/A
Supply Air Temperature Reset Parameters	Load Reset on VAV systems from 55F-60F	Load Reset on VAV systems from 55F-60F	None
HVAC (Water-side)			
Number of Chillers	1	1	N/A
Chiller Part-Load Controls	No VSD	No VSD	N/A
Chiller Capacity (Per Chiller)	≥75 and <150 Tons	≥75 and <150 Tons	N/A
Chiller Efficiency	4.9 COP	4.9 COP	N/A
Chilled Water Loop Supply Temperature	44	44	N/A
Chilled Water (CHW) Loop Delta-T	12	12	N/A
CHW Loop Temp Reset Parameters	54F @ 60F OA, 44F @ 80F OA	54F @ 60F OA, 44F @ 80F OA	N/A
CHW Loop Configuration3	Primary/Secondary	Primary/Secondary	N/A
Number of Primary CHW Pumps	1	1	N/A
Primary CHW Pump Power	11 W/GPM	11 W/GPM	N/A
Primary CHW Pump Speed Control	One Speed	One Speed	N/A
Secondary CHW Pump Power	11 W/GPM	11 W/GPM	N/A
Secondary CHW Pump Speed Control	One Speed	One Speed	N/A
Number of Cooling Towers / Fluid Coolers	1	1	1
Cooling Tower Fan Control	Two Speed	Variable Speed	Variable Speed
Condenser Water Leaving Temperature	85	85	85
Condenser Water (CW) Loop Delta-T	10	10	10
CW Loop Temp Reset Parameters	Condenser water supply temperature shall be calculated using the cooling tower approach to the 0.4% evaporation design wetbulb temperature	Condenser water design supply temperature shall be 85°F or 10°F approaching design wet-bulb temperature, whichever is lower, with a design temperature rise of 10°F.	Fixed
CW Loop Configuration	Primary Only	Primary Only	Primary Only
Number of CW Pumps	1	1	1
CW Pump Power	19 W/GPM	19 W/GPM	19 W/GPM
CW Pump Speed Control	One Speed	One Speed	Variable Speed
Water-side Economizer for Free Cooling	No	No	N/A

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Number of Boilers	2	2	2
Boiler Part-Load Controls	Staged	Staged	Staged
Boiler Capacity (Per Boiler)	N/A	N/A	N/A
Boiler Efficiency	80% Natural Draft	82% Natural Draft	**95% Condensing**
Boiler Water Loop Supply Temperature	180F	180F	Boiler will maintain the condenser water loop temperature.
Hot Water or Steam (HW) Loop Delta-T	50F	50F	
HW Loop Reset Parameters	150F @ 50F OA, 180F @ 20F OA	150F @ 50F OA, 180F @ 20F OA	
HW Loop Configuration	Primary Only	Primary Only	Primary Only
Number of Primary HW Pumps	2	2	1
Primary HW Pump Power	19W/GPM	19W/GPM	Pump power and control is incorporated into the CW Pump
Primary HW Pump Speed Control	Variable Speed	Variable Speed	
Domestic Water Heating			
DHW Equipment Type	Natural Gas	Natural Gas	Natural Gas
Equipment Efficiency	80%	80%	95%
Temperature Controls	120F Constant	120F Constant	120F Constant
DHW Flow	Standard Flow Fixtures	Standard Flow Fixtures	**20% Reduction in Flow Fixtures**
Lighting			
Automatic Lighting Shutoff Method	Scheduled off during unoccupied hours	Scheduled off during unoccupied hours	Scheduled off during unoccupied hours
Gross Lighted Floor Area	510,078 SF	510,078 SF	510,078 SF
Interior Lighting Power Calculation Method	Building Area	Building Area	Building Area
Interior LPD by Building Area (W/SF)	**Residential = 0.91 W/sf Garage = 0.3 W/sf Common Areas = 0.7 W/sf**	**Guest Rooms = 0.91 W/sf Garage = 0.21 W/sf Common Areas = 0.51 W/sf**	**Residential = .91 W/sf Garage = 0.18 W/sf Common Areas = 0.45 W/sf**
Miscellaneous			
Receptacle Equipment	1.00 W/sf	1.00 W/sf	1.00 W/sf
Escalators and Elevators	4 @ 35 HP Each	4 @ 35 HP Each	4 @ 35 HP Each
Utility Rates			
Electricity	$0.16/kWh	$0.16/kWh	$0.16/kWh
Natural Gas	$1.15/therm	$1.15/therm	$1.15/therm

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PROPOSED OUTPUT REPORTS:

REPORT- BEPS Building Energy Performance WEATHER FILE- Boston MA TMY2

		LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1	ELECTRICITY													
	MBTU	4507.6	0.0	4064.8	2380.2	2225.6	4.3	546.0	2420.7	0.0	0.0	0.0	0.0	16148.9
FM1	NATURAL-GAS													
	MBTU	0.0	0.0	0.0	7015.1	0.0	0.0	0.0	0.0	0.0	0.0	3104.5	0.0	10119.6
	MBTU	4507.6	0.0	4064.8	9395.3	2225.6	4.3	546.0	2420.7	0.0	0.0	3104.5	0.0	26268.5

TOTAL SITE ENERGY 26268.53 MBTU 52.4 KBTU/SQFT-YR GROSS-AREA 52.4 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 58566.43 MBTU 116.9 KBTU/SQFT-YR GROSS-AREA 116.9 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 4.84
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 374
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 66

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

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REPORT- BEPU Building Utility Performance WEATHER FILE- Boston MA TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1320714.	0.	1190972.	697390.	652096.	1263.	159964.	709252.	0.	0.	0.	0.	4731636.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	70151.	0.	0.	0.	0.	0.	0.	31045.	0.	101196.

TOTAL ELECTRICITY 4731636. KWH 9.441 KWH /SQFT-YR GROSS-AREA 9.441 KWH /SQFT-YR NET-AREA
TOTAL NATURAL-GAS 101196. THERM 0.202 THERM /SQFT-YR GROSS-AREA 0.202 THERM /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 4.84
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 374
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 66

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

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ASHRAE 90.1-2007 OUTPUT REPORTS:

REPORT- BEPS Building Energy Performance WEATHER FILE- Boston MA TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
MBTU	5661.7	0.0	4064.8	0.0	2496.3	11.9	1002.9	3966.4	0.0	0.0	0.0	0.0	17203.9
FM1 NATURAL-GAS													
MBTU	0.0	0.0	0.0	18027.8	0.0	0.0	0.0	0.0	0.0	0.0	4619.8	0.0	22647.6
MBTU	5661.7	0.0	4064.8	18027.8	2496.3	11.9	1002.9	3966.4	0.0	0.0	4619.8	0.0	39851.5

TOTAL SITE ENERGY 39851.48 MBTU 79.5 KBTU/SQFT-YR GROSS-AREA 79.5 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 74259.37 MBTU 148.2 KBTU/SQFT-YR GROSS-AREA 148.2 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.49
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 0
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 43

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

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REPORT- BEPU Building Utility Performance WEATHER FILE- Boston MA TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1658878.	0.	1190972.	0.	731410.	3490.	293851.	1162158.	0.	0.	0.	0.	5040748.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	180278.	0.	0.	0.	0.	0.	0.	46198.	0.	226476.

TOTAL ELECTRICITY 5040748. KWH 10.060 KWH /SQFT-YR GROSS-AREA 10.060 KWH /SQFT-YR NET-AREA
TOTAL NATURAL-GAS 226476. THERM 0.452 THERM /SQFT-YR GROSS-AREA 0.452 THERM /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.49
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 0
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 43

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES

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ASHRAE 90.1-2013 OUTPUT REPORTS:

REPORT- BEPS Building Energy Performance WEATHER FILE- Boston MA TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
MBTU	4946.7	0.0	4064.8	0.0	2438.0	8.6	1030.8	3982.8	0.0	0.0	0.0	0.0	16471.6
FM1 NATURAL-GAS													
MBTU	0.0	0.0	0.0	15702.3	0.0	0.0	0.0	0.0	0.0	0.0	4102.4	0.0	19804.7
MBTU	4946.7	0.0	4064.8	15702.3	2438.0	8.6	1030.8	3982.8	0.0	0.0	4102.4	0.0	36276.3

TOTAL SITE ENERGY 36276.27 MBTU 72.4 KBTU/SQFT-YR GROSS-AREA 72.4 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 69219.48 MBTU 138.1 KBTU/SQFT-YR GROSS-AREA 138.1 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.00
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 0
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

88 Black Falcon Avenue
Suite 210
Boston, MA 02210
Main: 617-210-1600
wspgroup.com/usa
pbworld.com/usa

Quinzani Rev_5 DOE-2.2-48m 10/19/2016 13:18:00 BDL RUN 1

REPORT- BEPU Building Utility Performance WEATHER FILE- Boston MA TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	1449379.	0.	1190972.	0.	714338.	2529.	302015.	1166953.	0.	0.	0.	0.	4826172.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	157023.	0.	0.	0.	0.	0.	0.	41024.	0.	198047.

TOTAL ELECTRICITY 4826172. KWH 9.632 KWH /SQFT-YR GROSS-AREA 9.632 KWH /SQFT-YR NET-AREA
TOTAL NATURAL-GAS 198047. THERM 0.395 THERM /SQFT-YR GROSS-AREA 0.395 THERM /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.00
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 0
HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Appendix C

Climate Change Checklist

Climate Change Preparedness and Resiliency Checklist for New Construction

In November 2013, in conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the Boston Redevelopment Authority adopted policy for all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding project resiliency, preparedness, and to mitigate any identified adverse impacts that might arise under future climate conditions.

For more information about the City of Boston's climate policies and practices, and the 2011 update of the climate action plan, *A Climate of Progress*, please see the City's climate action web pages at http://www.cityofboston.gov/climate

In advance we thank you for your time and assistance in advancing best practices in Boston.

Climate Change Analysis and Information Sources:

1. Northeast Climate Impacts Assessment (www.climatechoices.org/ne/)
2. USGCRP 2009 (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/)
3. Army Corps of Engineers guidance on sea level rise (http://planning.usace.army.mil/toolbox/library/ECs/EC11652212Nov2011.pdf)
4. Proceeding of the National Academy of Science, "Global sea level rise linked to global temperature", Vermeer and Rahmstorf, 2009 (http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf)
5. "Hotspot of accelerated sea-level rise on the Atlantic coast of North America", Asbury H. Sallenger Jr*, Kara S. Doran and Peter A. Howd, 2012 (http://www.bostonredevelopmentauthority.org/planning/Hotspot of Accelerated Sea-level Rise 2012.pdf)
6. "Building Resilience in Boston": Best Practices for Climate Change Adaptation and Resilience for Existing Buildings, Linnean Solutions, The Built Environment Coalition, The Resilient Design Institute, 2103 (http://www.greenribboncommission.org/downloads/Building_Resilience_in_Boston_SML.pdf)

Checklist

Please respond to all of the checklist questions to the fullest extent possible. For projects that respond "Yes" to any of the D.1 – Sea-Level Rise and Storms, Location Description and Classification questions, please respond to all of the remaining Section D questions.

Checklist responses are due at the time of initial project filing or Notice of Project Change and final filings just prior seeking Final BRA Approval. A PDF of your response to the Checklist should be submitted to the Boston Redevelopment Authority via your project manager.

Please Note: When initiating a new project, please visit the BRA web site for the most current Climate Change Preparedness & Resiliency Checklist.

A.1 - Project Information

Project Name:	370-380 Harrison Avenue
Project Address Primary:	370-380 Harrison Avenue
Project Address Additional:	
Project Contact (name / Title / Company / email / phone):	David Chattman, Vice President, Related Beal, DChattman@Related.com, (617) 451-2100

A.2 - Team Description

Owner / Developer:	South End 10, LLC and South End 11, LLC
Architect:	Utile (Executive Architect), Robert A.M. Stern Architects, LLP (Design Architect)
Engineer (building systems):	WSP
Sustainability / LEED:	WSP Parsons Brinckerhoff
Permitting:	Epsilon Associates, Inc.
Construction Management:	TBD
Climate Change Expert:	Epsilon Associates, Inc.

A.3 - Project Permitting and Phase

At what phase is the project – most recent completed submission at the time of this response?

☐ PNF / Expanded PNF Submission	☑ Draft / Final Project Impact Report Submission	☐ BRA Board Approved	☐ Notice of Project Change
☐ Planned Development Area	☐ BRA Final Design Approved	☐ Under Construction	☐ Construction just completed:

A.4 - Building Classification and Description

List the principal Building Uses:	Residential, Commercial/Retail
List the First Floor Uses:	*Commercial/Retail, Residential Lobbies, Residential Amenity*

What is the principal Construction Type – select most appropriate type?

☐ Wood Frame	☐ Masonry	☐ Steel Frame	☑ Concrete

Describe the building?

Site Area:	*44,570 SF*	Building Area:	*356,500 SF*
Building Height:	*150 Ft.*	Number of Stories:	*14 Flrs.*
First Floor Elevation (reference Boston City Base):	*15.9 feet*	Are there below grade spaces/levels, if yes how many:	*3 levels*

A.5 - Green Building

Which LEED Rating System(s) and version has or will your project use (by area for multiple rating systems)?

Select by Primary Use:	☑ New Construction	☐ Core & Shell	☐ Healthcare	☐ Schools
	☐ Retail	☐ Homes Midrise	☐ Homes	☐ Other
Select LEED Outcome:	☐ Certified	☑ Silver	☐ Gold	☐ Platinum

Will the project be USGBC Registered and / or USGBC Certified?

Registered:	*Yes*	Certified:	*Yes*

A.6 - Building Energy-

What are the base and peak operating energy loads for the building? TBD

Electric:	*(kW)*	Heating:	*(MMBtu/hr)*
What is the planned building Energy Use Intensity:	*(kWh/SF)*	Cooling:	*(Tons/hr)*

What are the peak energy demands of your critical systems in the event of a service interruption?

Electric:	*(kW)*	Heating:	*12,000 MBH*
		Cooling:	*(Tons/hr)*

What is nature and source of your back-up / emergency generators?

Electrical Generation:	*600 (kW)*		Fuel Source:	*Diesel*
System Type and Number of Units:	☑ Combustion Engine	☐ Gas Turbine	☐ Combine Heat and Power	*(Units)*

B - Extreme Weather and Heat Events

Climate change will result in more extreme weather events including higher year round average temperatures, higher peak temperatures, and more periods of extended peak temperatures. The section explores how a project responds to higher temperatures and heat waves.

B.1 - Analysis

What is the full expected life of the project?

Select most appropriate:	☐ 10 Years	☐ 25 Years	☑ 50 Years	☐ 75 Years

What is the full expected operational life of key building systems (e.g. heating, cooling, ventilation)?

Select most appropriate:	☐ 10 Years	☑ 25 Years	☐ 50 Years	☐ 75 Years

What time span of future Climate Conditions was considered?

Select most appropriate:	☐ 10 Years	☐ 25 Years	☑ 50 Years	☐ 75 Years

Analysis Conditions - What range of temperatures will be used for project planning – Low/High?

8/91 Deg.

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

100 Deg.	*5 Days*	*5 Events / yr.*

What Drought characteristics will be used for project planning – Duration and Frequency?

30-90 Days	*0.2 Events / yr.*

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

45 Inches / yr.	*4 Inches*	*0.5 Events / yr.*

What Extreme Wind Storm Event characteristics will be used for project planning – Peak Wind Speed, Duration of Storm Event, and Frequency of Events per year?

105 Peak Wind	*10 Hours*	*0.25 Events / yr.*

B.2 - Mitigation Strategies

What will be the overall energy performance, based on use, of the project and how will performance be determined?

Building energy use below code:	***TBD***
How is performance determined:	

What specific measures will the project employ to reduce building energy consumption?

Select all appropriate:	☑ High performance building envelop	☑ High performance lighting & controls	☐ Building day lighting	☑ EnergyStar equip. / appliances
	☐ High performance HVAC equipment	☑ Energy recovery ventilation	☐ No active cooling	☐ No active heating
Describe any added measures:				

What are the insulation (R) values for building envelop elements?

Roof:	*R = 25*	Walls / Curtain Wall Assembly:	*R = 13*
Foundation:	*R = 15*	Basement / Slab:	*R =10*
Windows:	*R = / U =0.4*	Doors:	*R = / U =0.7*

What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure?

☐ On-site clean energy / CHP system(s)	☐ Building-wide power dimming	☐ Thermal energy storage systems	☐ Ground source heat pump
☐ On-site Solar PV	☐ On-site Solar Thermal	☐ Wind power	☐ None
Describe any added measures:	On-site energy options will be studied. See Chapter 5 of the DPIR.		

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems?

Select all appropriate:	☐ Connected to local distributed electrical	☐ Building will be Smart Grid ready	☐ Connected to distributed steam, hot, chilled water	☐ Distributed thermal energy ready

Will the building remain operable without utility power for an extended period?

	Yes	If yes, for how long:	*TBD*
If Yes, is building "Islandable?	TBD		
If Yes, describe strategies:			

Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure:

Select all appropriate:	☐ Solar oriented – longer south walls	☐ Prevailing winds oriented	☐ External shading devices	☐ Tuned glazing,
	☐ Building cool zones	☑ Operable windows	☑ Natural ventilation	☐ Building shading
	☐ Potable water for drinking / food preparation	☐ Potable water for sinks / sanitary systems	☐ Waste water storage capacity	☑ High Performance Building Envelop
Describe any added measures:	Cool room will be studied			

What measures will the project employ to reduce urban heat-island effect?

Select all appropriate:	☐ High reflective paving materials	☑ Shade trees & shrubs	☐ High reflective roof materials	☐ Vegetated roofs
Describe other strategies:	High reflective paving materials and vegetated roofs will be studied.			

What measures will the project employ to accommodate rain events and more rain fall?

Select all appropriate:	☐ On-site retention systems & ponds	☐ Infiltration galleries & areas	☐ Vegetated water capture systems	☐ Vegetated roofs
Describe other strategies:				

What measures will the project employ to accommodate extreme storm events and high winds?

Select all appropriate:	☐ Hardened building structure & elements	☑ Buried utilities & hardened infrastructure	☐ Hazard removal & protective landscapes	☑ Soft & permeable surfaces (water infiltration)
Describe other strategies:				

C - Sea-Level Rise and Storms

Rising Sea-Levels and more frequent Extreme Storms increase the probability of coastal and river flooding and enlarging the extent of the 100 Year Flood Plain. This section explores if a project is or might be subject to Sea-Level Rise and Storm impacts.

C.1 - Location Description and Classification:

Do you believe the building to susceptible to flooding now or during the full expected life of the building?

	No

Describe site conditions?

Site Elevation – Low/High Points:	*Boston City Base Elev.(Ft.)*
Building Proximity to Water:	*740 Ft.*

Is the site or building located in any of the following?

Coastal Zone:	*No*	Velocity Zone:	*No*
Flood Zone:	*No*	Area Prone to Flooding:	*No*

Will the 2013 Preliminary FEMA Flood Insurance Rate Maps or future floodplain delineation updates due to Climate Change result in a change of the classification of the site or building location?

2013 FEMA Prelim. FIRMs:	*No*	Future floodplain delineation updates:	*No*

What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding?

~400 Ft.

If you answered YES to any of the above Location Description and Classification questions, please complete the following questions. ***Otherwise you have completed the questionnaire; thank you!***

C - Sea-Level Rise and Storms

This section explores how a project responds to Sea-Level Rise and / or increase in storm frequency or severity.

C.2 - Analysis

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

Sea Level Rise:	*Ft.*	Frequency of storms:	*per year*

C.3 - Building Flood Proofing

Describe any strategies to limit storm and flood damage and to maintain functionality during an extended periods of disruption.

What will be the Building Flood Proof Elevation and First Floor Elevation:

Flood Proof Elevation:	*feet*	First Floor Elevation:	*feet*

Will the project employ temporary measures to prevent building flooding (e.g. barricades, flood gates):

		If Yes, to what elevation	
If Yes, describe:			

What measures will be taken to ensure the integrity of critical building systems during a flood or severe storm event:

☐ Systems located above 1st Floor.	☐ Water tight utility conduits	☐ Waste water back flow prevention	☐ Storm water back flow prevention

Were the differing effects of fresh water and salt water flooding considered:

Yes/No

Will the project site / building(s) be accessible during periods of inundation or limited access to transportation:

	If yes, to what height above 100 Year Floodplain:	*Boston City Base Elev. (Ft.)*

Will the project employ hard and / or soft landscape elements as velocity barriers to reduce wind or wave impacts?

No

If Yes, describe:

Will the building remain occupiable without utility power during an extended period of inundation:

Yes/ No	If Yes, for how long:	

Describe any additional strategies to addressing sea level rise and or sever storm impacts:

C.4 - Building Resilience and Adaptability

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Will the building be able to withstand severe storm impacts and endure temporary inundation?

Select appropriate:		☐ Hardened / Resilient Ground Floor Construction	☐ Temporary shutters and or barricades	☐ Resilient site design, materials and construction

Can the site and building be reasonably modified to increase Building Flood Proof Elevation?

Select appropriate:		☐ Surrounding site elevation can be raised	☐ Building ground floor can be raised	☐ Construction been engineered
Describe additional strategies:				

Has the building been planned and designed to accommodate future resiliency enhancements?

Select appropriate:		☐ Solar PV	☐ Solar Thermal	☐ Clean Energy / CHP System(s)
		☐ Potable water storage	☐ Wastewater storage	☐ Back up energy systems & fuel
Describe any specific or additional strategies:				

Thank you for completing the Boston Climate Change Resilience and Preparedness Checklist!

For questions or comments about this checklist or Climate Change Resiliency and Preparedness best practices, please contact: John.Dalzell.BRA@cityofboston.gov

Appendix D

Accessibility Checklist

Accessibility Checklist

(to be added to the BRA Development Review Guidelines)

In 2009, a nine-member Advisory Board was appointed to the Commission for Persons with Disabilities in an effort to reduce architectural, procedural, attitudinal, and communication barriers affecting persons with disabilities in the City of Boston. These efforts were instituted to work toward creating universal access in the built environment.

In line with these priorities, the Accessibility Checklist aims to support the inclusion of people with disabilities. In order to complete the Checklist, you must provide specific detail, including descriptions, diagrams and data, of the universal access elements that will ensure all individuals have an equal experience that includes full participation in the built environment throughout the proposed buildings and open space.

In conformance with this directive, all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding the following:

- improvements for pedestrian and vehicular circulation and access;
- encourage new buildings and public spaces to be designed to enhance and preserve Boston's system of parks, squares, walkways, and active shopping streets;
- ensure that persons with disabilities have full access to buildings open to the public;
- afford such persons the educational, employment, and recreational opportunities available to all citizens; and
- preserve and increase the supply of living space accessible to persons with disabilities.

We would like to thank you in advance for your time and effort in advancing best practices and progressive approaches to expand accessibility throughout Boston's built environment.

Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
    a. http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
    a. http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Boston Complete Street Guidelines
    a. http://bostoncompletestreets.org/
4. City of Boston Mayors Commission for Persons with Disabilities Advisory Board
    a. http://www.cityofboston.gov/Disability
5. City of Boston – Public Works Sidewalk Reconstruction Policy
    a. http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
6. Massachusetts Office On Disability Accessible Parking Requirements
    a. www.mass.gov/anf/docs/mod/hp-parking-regulations-mod.doc
7. MBTA Fixed Route Accessible Transit Stations
    a. http://www.mbta.com/about_the_mbta/accessibility/

Article 80 | ACCESSIBILTY CHECKLIST

Project Information

Project Name:	370-380 Harrison Avenue
Project Address Primary:	370-380 Harrison Avenue
Project Address Additional:	
Project Contact (name / Title / Company / email / phone):	David Chattman, Vice President, Related Beal, DChattman@Related.com, (617) 451-2100

Team Description

Owner / Developer:	South End 10, LLC and South End 11, LLC
Architect:	Utile (Executive Architect), Robert A.M. Stern Architects, LLP (Design Architect)
Engineer (building systems):	TBD
Sustainability / LEED:	WSP Parsons Brinckerhoff
Permitting:	Epsilon Associates, Inc.
Construction Management:	TBD

Project Permitting and Phase

At what phase is the project – at time of this questionnaire?

PNF / Expanded PNF Submitted	Draft / Final Project Impact Report Submitted	BRA Board Approved
BRA Design Approved	Under Construction	Construction just completed:

Article 80 | ACCESSIBILTY CHECKLIST

Building Classification and Description

What are the principal Building Uses - select all appropriate uses?

Residential – One to Three Unit	**Residential - Multi-unit, Four +**	Institutional	Education
Commercial	Office	**Retail**	Assembly
Laboratory / Medical	Manufacturing / Industrial	Mercantile	Storage, Utility and Other
First Floor Uses (List)	*Retail / commercial, Residential lobby and accessory spaces*		

What is the Construction Type – select most appropriate type?

Wood Frame	Masonry	Steel Frame	**Concrete**

Describe the building?

Site Area:	*44,570 SF*	Building Area:	*356,500 SF*
Building Height:	*150 Ft.*	Number of Stories:	*14 Flrs.*
First Floor Elevation:	*15.9 feet*	Are there below grade spaces:	*Yes*

Assessment of Existing Infrastructure for Accessibility:

This section explores the proximity to accessible transit lines and proximate institutions such as, but not limited to hospitals, elderly and disabled housing, and general neighborhood information. The proponent should identify how the area surrounding the development is accessible for people with mobility impairments and should analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.

Provide a description of the development neighborhood and identifying characteristics.	The area around the Project site includes a mix of commercial and industrial properties with large parking lots, as well as a number of new developments and proposed developments, including Ink Block, The Troy, 345 Harrison Avenue and 80 East Berkeley Street. Further south is the South of Washington Street (SOWA) sub-area, a vibrant mixed-use neighborhood.
List the surrounding ADA compliant MBTA transit lines and the proximity to the development site: Commuter rail, subway, bus, etc.	Bus routes 9, 11, and 47. Silver Line.

List the surrounding institutions: hospitals, public housing and elderly and disabled housing developments, educational facilities, etc.	Pine Street Inn, Eva White Housing, ABCD South End Head Start, Little Sprouts, Sunshine Child Care Center, Acorn Child Care Center, Josiah Quincy School, Quincy Upper School, Chung-Wah Academy-New England, City Lights Performing Arts School
Is the proposed development on a priority accessible route to a key public use facility? List the surrounding: government buildings, libraries, community centers and recreational facilities and other related facilities.	Boston Chinatown Neighborhood Center, Castle Square Community Center

Surrounding Site Conditions – Existing:

This section identifies the current condition of the sidewalks and pedestrian ramps around the development site.

Are there sidewalks and pedestrian ramps existing at the development site?	Yes
If yes above, list the existing sidewalk and pedestrian ramp materials and physical condition at the development site.	East Berkeley Street Existing granite curb and cement concrete sidewalk – fair to poor condition Portions of cement concrete sidewalk have different colors Two existing ADA pedestrian ramps at N/E corner of the Harrison Avenue / East Berkeley St intersection – fair condition Extra curb cuts for current building Existing street sidewalk has street lights and associated electrical conduits, hand holes and street light control cabinet Harrison Avenue Existing granite curb and cement concrete sidewalk – fair condition Long curb cuts for driveway ramps to @ Quinzani Bakery building for access to loading docks and parking area Two existing ADA pedestrian ramps at S/E corner of the Harrison Avenue / Traveler St intersection – fair condition

	Traveler Street Existing granite curb and cement concrete sidewalk –fair to poor condition Long curb cut for driveway ramp into parking area adjacent to Ho Kong Bean Sprout building
Are the sidewalks and pedestrian ramps existing-to-remain? **If yes,** have the sidewalks and pedestrian ramps been verified as compliant? **If yes,** please provide surveyors report.	Sidewalks and pedestrian ramps around development site will be surveyed for compliance. These ramps are also included in the planned Harrison Avenue street improvements and will be compliant.
Is the development site within a historic district? **If yes,** please identify.	South End Harrison/Albany Protection Area

Surrounding Site Conditions – Proposed

This section identifies the proposed condition of the walkways and pedestrian ramps in and around the development site. The width of the sidewalk contributes to the degree of comfort and enjoyment of walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Typically, a five foot wide Pedestrian Zone supports two people walking side by side or two wheelchairs passing each other. An eight foot wide Pedestrian Zone allows two pairs of people to comfortable pass each other, and a ten foot or wider Pedestrian Zone can support high volumes of pedestrians.

Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? See: www.bostoncompletestreets.org	Yes
If yes above, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, Boulevard.	Traveler Street will be Type A per Harrison-Albany Corridor Guidelines; Harrison Ave and E Berkeley St will be Type B per Harrison-Albany Corridor Guidelines.
What is the total width of the proposed sidewalk? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone.	Harrison Ave – width varies from 20'-35'. Frontage: 3', Ped: 10', Furn: 7'" Traveler Street – 19'. Frontage: 3', Ped: 10', Furn: 6'-0" E. Berkeley Street – 11'. Frontage: 0', Ped: 11', Furn: 0'-0" Note: dimensioned to face of building

List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	To be determined.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the City of Boston Public Improvement Commission?	Proponent does not anticipate a pedestrian easement.
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way?	No.
If yes above, what are the proposed dimensions of the sidewalk café or furnishings and what will the right-of-way clearance be?	

Proposed Accessible Parking:

See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability Handicap Parking Regulations.

What is the total number of parking spaces provided at the development site parking lot or garage?	180
What is the total number of accessible spaces provided at the development site?	6
Will any on street accessible parking spaces be required? If yes, has the proponent contacted the Commission for Persons with Disabilities and City of Boston Transportation Department	No

regarding this need?	
Where is accessible visitor parking located?	On the first parking level, one floor below grade.
Has a drop-off area been identified? If yes, will it be accessible?	Yes, the drop-off area is in the rear of the building and will be accessible.
Include a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations. Please include route distances.	See attached parking level diagram.

Circulation and Accessible Routes:

The primary objective in designing smooth and continuous paths of travel is to accommodate persons of all abilities that allow for universal access to entryways, common spaces and the visit-ability* of neighbors.

**Visit-ability – Neighbors ability to access and visit with neighbors without architectural barrier limitations*

Provide a diagram of the accessible route connections through the site.	See attached Ground Floor Accessibility Plan and Parking Level P1 Accessibility Plan
Describe accessibility at each entryway: Flush Condition, Stairs, Ramp Elevator.	All entryways are a flush condition.
Are the accessible entrance and the standard entrance integrated?	Yes
If no above, what is the reason?	
Will there be a roof deck or outdoor courtyard space? If yes, include	To be determined.

diagram of the accessible route.	
Has an accessible routes way-finding and signage package been developed? If yes, please describe.	Wayfinding to be developed at a later date.

Accessible Units: (If applicable)

In order to facilitate access to housing opportunities this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing choice.

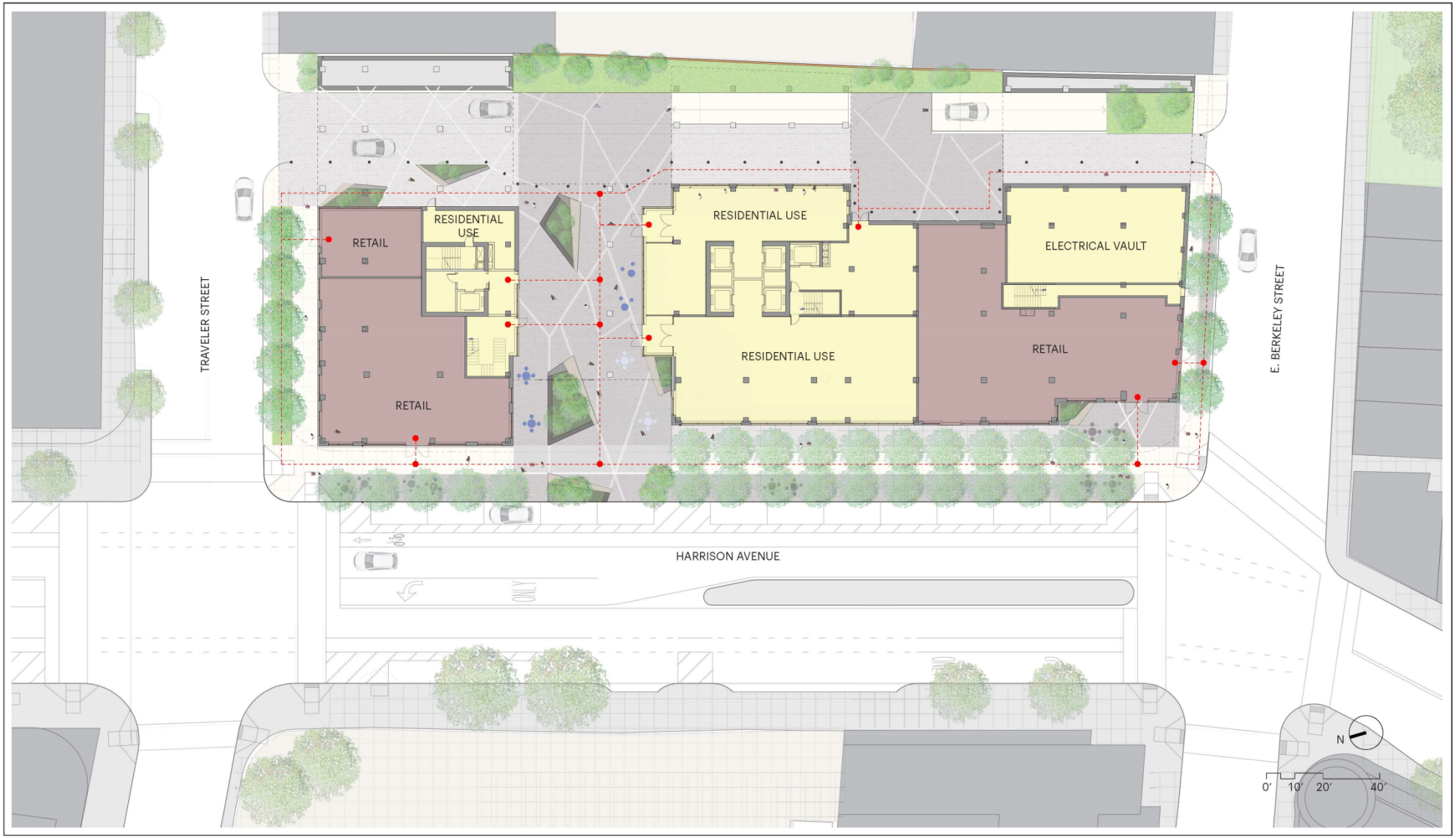
What is the total number of proposed units for the development?	324
How many units are for sale; how many are for rent? What is the market value vs. affordable breakdown?	Anticipated 92 units for sale, 232 units for rent. Affordable breakdown consistent with the applicable IDP. Final mix will be determined as the Project progresses through the approval process.
How many accessible units are being proposed?	Condominiums: 92 units will meet MAAB Group 1 requirements; Rental: 220 units will meet MAAB Group 1 requirements; In accordance with the requirements, 5% will meet MAAB Group 2A requirements (anticipated to be 12 units). The final numbers may change as the design progresses.
Please provide plan and diagram of the accessible units.	A plan and diagram of accessible units will be shared as they are developed.
How many accessible units will also be affordable? If none, please describe reason.	All affordable units will be accessible. 5% will meet MAAB Group 2A requirements, Remaining will meet MAAB Group 1 requirements
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs at entry or step to balcony. If yes, please provide reason.	No
Has the proponent reviewed or presented the proposed plan to the City of Boston Mayor's Commission for Persons with Disabilities	No

Advisory Board?	
Did the Advisory Board vote to support this project? **If no,** what recommendations did the Advisory Board give to make this project more accessible?	

Thank you for completing the Accessibility Checklist!

For questions or comments about this checklist or accessibility practices, please contact:

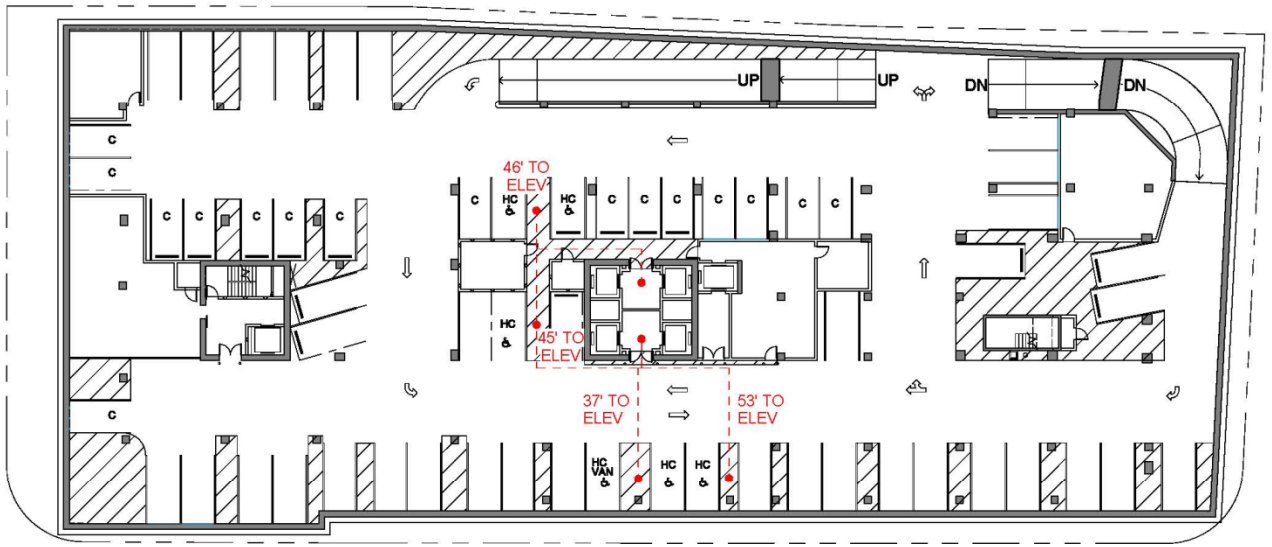
kathryn.quigley@boston.gov | Mayors Commission for Persons with Disabilities



370-380 Harrison Avenue Boston, Massachusetts

RAMSA ROBERT A.M. STERN ARCHITECTS utile

Ground Floor Accessibility Plan



N

0' 10' 20' 40'

370-380 Harrison Avenue Boston, Massachusetts

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Parking Level P1 Accessibility Plan

Appendix E

Transportation

370-380 Harrison Avenue

Legend:

Your Selections

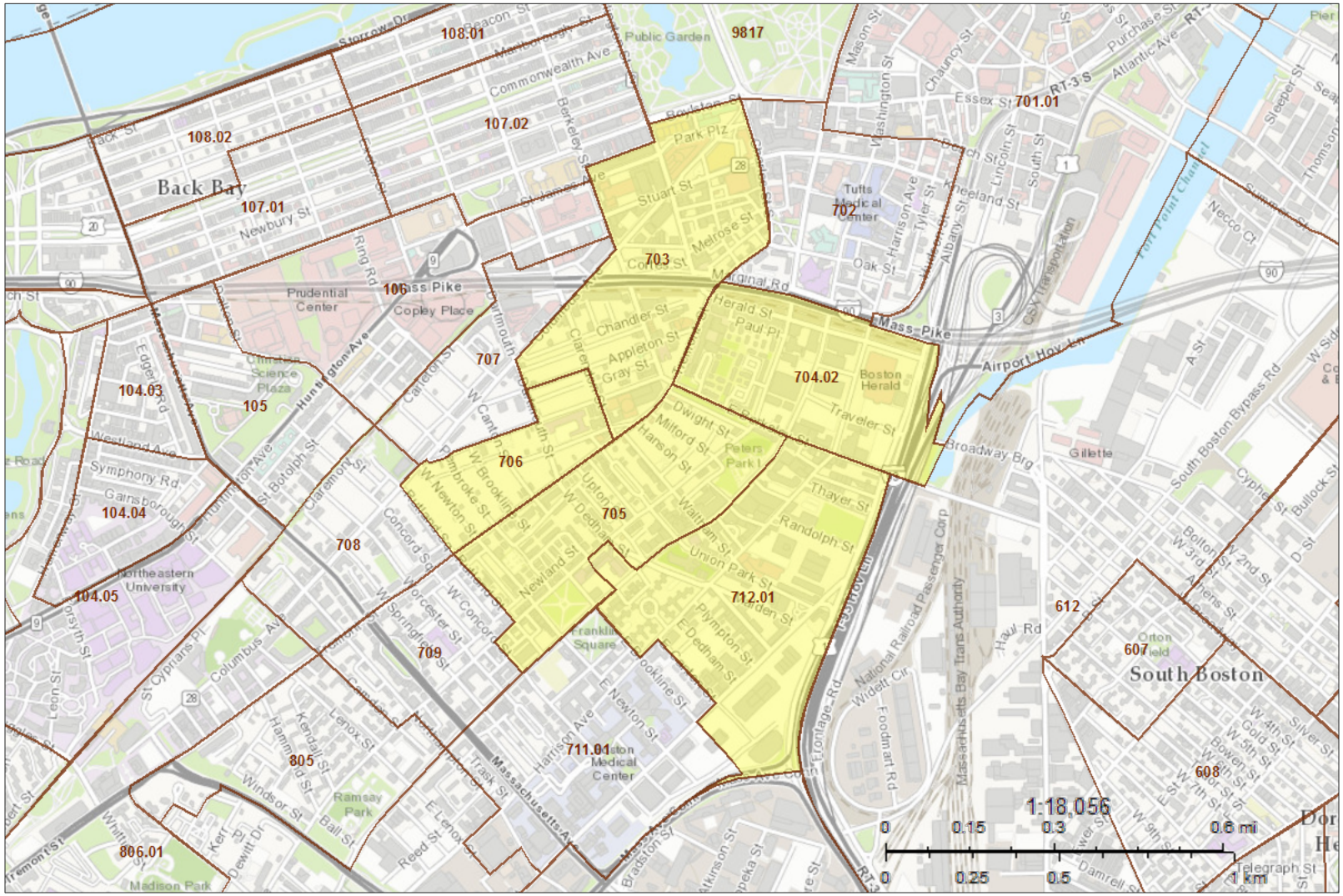
- ☐ 2014 boundaries were used to map 'Your Selections'

Selection Results

No Legend

Boundaries

- ☐ Census Tract



B25044: TENURE BY VEHICLES
2010-2014 American Community Survey 5-

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

	Census Tract 703, Suffolk County,			Census Tract 704.02, Suffolk County,			Census Tract 705, Suffolk County,			Census Tract 706, Suffolk County,			Census Tract 712.01, Suffolk County,			TOTAL	
	Estimate	Margin of		Estimate	Margin of		Estimate	Margin of		Estimate	Margin of		Estimate	Margin of		Estimate	
Total:	2,475	+/-124		662	+/-35		2,952	+/-192		1,283	+/-100		1,348	+/-88		8,720	
Owner occupied:	1,225	+/-162		0	+/-12		1,394	+/-215		834	+/-103		399	+/-72		3,852	
No vehicle available	169	+/-86	14%	0	+/-12		317	+/-119	23%	227	+/-79	27%	78	+/-33	20%	791	21%
1 vehicle available	846	+/-157	69%	0	+/-12		762	+/-174	55%	408	+/-78	49%	243	+/-68	61%	2,259	59%
2 vehicles available	210	+/-106	17%	0	+/-12		297	+/-108	21%	166	+/-68	20%	70	+/-38	18%	743	19%
3 vehicles available	0	+/-12	0%	0	+/-12		18	+/-28	1%	22	+/-24	3%	8	+/-12	2%	48	1%
4 vehicles available	0	+/-12	0%	0	+/-12		0	+/-17	0%	11	+/-18	1%	0	+/-12	0%	11	0%
5 or more vehicles available	0	+/-12	0%	0	+/-12		0	+/-17	0%	0	+/-12	0%	0	+/-12	0%	0	0%
Renter occupied:	1,250	+/-164		662	+/-35		1,558	+/-203		449	+/-123		949	+/-96		4,868	
No vehicle available	728	+/-162	58%	401	+/-56	61%	877	+/-207	56%	297	+/-127	66%	451	+/-98	48%	2,754	57%
1 vehicle available	412	+/-105	33%	249	+/-45	38%	573	+/-154	37%	139	+/-60	31%	416	+/-118	44%	1,789	37%
2 vehicles available	108	+/-63	9%	6	+/-9	1%	97	+/-59	6%	13	+/-15	3%	82	+/-63	9%	306	6%
3 vehicles available	2	+/-7	0%	6	+/-9	1%	11	+/-23	1%	0	+/-12	0%	0	+/-12	0%	19	0%
4 vehicles available	0	+/-12	0%	0	+/-12	0%	0	+/-17	0%	0	+/-12	0%	0	+/-12	0%	0	0%
5 or more vehicles available	0	+/-12	0%	0	+/-12	0%	0	+/-17	0%	0	+/-12	0%	0	+/-12	0%	0	0%

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2010-2014 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '******' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.